



# MILITARY PHYSICIAN

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## Military Physician

### Quarterly

Official Organ of the Section of Military Physicians at the Polish Medical Society

Oficjalny Organ Sekcji Lekarzy Wojskowych Polskiego Towarzystwa Lekarskiego

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For many years, Military Physician has been indexed in the Polish Medical Bibliography (Polska Bibliografia Lekarska), the oldest Polish bibliography database.

The primary version of Military Physician quarterly is its electronic version ([www.lekarzwojskowy.pl](http://www.lekarzwojskowy.pl)).

The journal is financed by the Military Medical Chamber

### Background

Military Physician has been published continuously since 1920, currently as a quarterly of the Military Institute of Medicine in Warsaw, Poland.

1. Military Physician publishes original (experimental and clinical) articles, reviews, reports on military issues, deontological papers, interesting case reports, articles on the history of medicine, descriptions of rationalisation results, posthumous memoirs, letters to the editor, book reviews, article (review) summaries from international journals particularly on military health service, reports on meetings and scientific conferences, and announcements of events.
2. Before publication, each article is reviewed by 2 independent reviewers while maintaining anonymity.
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5. Authors of clinical studies on medications (international name) and medical procedures should provide a description of research funding and the influence of the sponsor on the content of the publication.
6. The Author must provide the Editorial Board with the consent of each image owner to use the image in the article.
7. Please submit your article to: Editorial Board of Military Physician, 128 Szaserów St., 04-141 Warsaw 44, Poland, or by e-mail: lekarzwojskowy@wim.mil.pl.
8. All Authors who wish to publish their papers in Military Physician are asked to carefully read and strictly follow the guidelines listed below. Failure to follow the requirements of the Editorial Board makes editing more difficult, increases costs and delays publication. Manuscripts not meeting the requirements will not be published, and those considered inadequately prepared will be returned to Authors for revision.

### Manuscript

1. Articles should be in MS Word and sent by e-mail.
2. The number of pages of the manuscript (including tables, figures and references) cannot exceed 30 pages for original articles, 30 for review articles, 20 for reports, 30 for articles on the history of medicine and 15 for rationalisation articles. Reports on meetings and conferences should be concise (up to 5 pages) and discuss only significant issues.
3. An original publication may also have the form of a short temporary report.
4. Materials for printing
  - 1) Text (with references, tables and figure captions) should be uploaded as a separate file. One page of the manuscript should contain 30 lines, about 60 characters each (must be about 1,800 characters). The text must be written in Times New Roman 12 point font and double spaced (this also applies to references, tables, captions etc.), with 2.5 cm left margin, and no right margin, i.e. with the 'flag'. Authors are asked not to format the titles, i.e., not to centre or justify them, as well as not to use the tabulator or automatic numbering (both within the text and references). A new paragraph should be started from the left margin without paragraph indentation. Please do not insert blank lines between paragraphs or enumerations. From typefaces, bold (semi-bold) and italics for foreign phrases may be used.
  - 2) Please do not insert any graphics into the Word manuscript. Figures and tables should be referenced in the body of the text as follows: "in Figure 1", "(Table 1)". The number of tables should be reduced to a

minimum. Each table should be provided with captions in Polish and English in bold in the first row. Figures (including maps) and images should be saved in a separate file. Digital images should have a resolution of 300 dpi and be saved in TIFF format. Good quality traditional images should be delivered on photographic paper. The reverse side of each image delivered on paper should contain the author's last name, the title of the contribution, a consecutive number and a marking indicating the top of the image.

5. Papers should be prepared carefully, in accordance with Polish spelling and with special attention to communicativeness and Polish medical nomenclature. Abstracts, keywords and figure captions translated into English should be identical with the Polish version and show an appropriate language level. Manuscripts that do not meet the criteria will be sent back to the authors for revision.

6. Each article should include the following:

- 1) On the first page: main title in Polish and English, Author's or Authors' (max. 10 people) first and last names, including academic degrees, full name of affiliated institute (institutes), head of the institute (academic degree, first and last name), below an abstract (up to 15 lines) with keywords in Polish and another abstract with keywords in English, corresponding author, his/her postal address with postal code, telephone (fax) and e-mail address.

2) Main text

Original articles should be prepared according to the following structure: introduction, aim, material and methods, results, discussion, conclusions, references; case reports: introduction, case description, discussion, summary (conclusions), and references.

Abbreviations and acronyms should be defined when first mentioned in the text and consequently used in the paper.

3) References should be presented according to the order they appear in the text. If the article has no more than four authors, all of them should be named. If there are more – a maximum of first three, followed by "et al.". References should be numbered using the keyboard, please do not use automatic numbering. Examples of citations:

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Books:

Rudziński E. Alergia na leki: z uwzględnieniem odczynów anafilaktycznych i idiosyncrazji [Drug allergy: including anaphylactic reactions and idiosyncrasy]. Lublin, Wydawnictwo Czelej, 2002: 338-340

Chapter of a book:

Wantz GE. Groin hernia. In: Cameron JJ, ed. *Current surgical therapy*. St Louis, Mosby, 1998:557-561

The list of references should include only those publications that were used by the Author and should be reduced to 20. All references should be cited in the text and the numbers of references should be put in square brackets. In order to avoid errors, titles should be copied from medical databases.

7. The paper should be accompanied by: a) author's request to publish the paper with a declaration that the article has not been published before and not simultaneously submitted to any other journal, b) approval of the head of the clinic, head of the department or head of the institute in which the research has been conducted, and in case of a study carried out in several centres - approval of all of them, c) Declaration of Conflict of Interest, and d) acknowledgements, if applicable.

8. The Editorial Board reserves the right to correct nomenclature and stylistic errors as well as to introduce abbreviations without consultation with the Author.

9. The Author receives 1 free copy of the issue in which his or her article has been published. For further copies, contact the Editor.

10. If the manuscript is not accepted for publication, the Editorial Board will return the submitted article to the Author.

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*Dear Readers,*

*The year 2020 marks the 100th anniversary of Military Physician, the most important scientific journal for military physicians in Poland, published since 3 January 1920. At that time it was the third Polish medical journal available, and the only one published under the same name continuously, including during the Second World War period.*

*Creating a journal for Polish military physicians was the idea of Lt. Col. Prof. Zdzisław Ambroży Dmochowski, a recognised university professor with significant scientific achievements, who in January 1919 was called up for military service as the President of the Military Sanitary Council.*

*Over the 100 years, Military Physician has contributed to the development and education of Polish physicians, primarily those employed by the army, by offering a high quality content, and always promoting rational knowledge and new medical achievements useful in the daily practice of military physicians. It is particularly important nowadays, when military physicians participating in military missions face numerous new challenges, and increasingly often witness the highest level of medical assistance in the army, in all kinds of conditions. The journal has remained not only a source of information for them, but also a platform fostering the exchange of views and experiences.*

*As part of celebrations for the 100th anniversary of Military Physician, on 17 January 2020, a scientific symposium dedicated to the journal took place in the Military Institute of Medicine in Warsaw. The participants included representatives of the President of Poland, Polish government, Ministry of National Defence, Military Healthcare Department at the Ministry of National Defence, other medical journals, as well as a numerous group of supporters. In the scientific section, the invited guests included recognised Polish historians: Professor Anna Marek and Professor Maciej Kledzik, who gave lectures about interesting episodes in the history of Polish military health care, and the host of the symposium, Major General Professor Grzegorz Gielerak, head of the Military Institute of Medicine, and chairman of the journal's Programme Council, who discussed the present situation and potential future challenges.*

*This issue of the Military Physician largely presents the materials from the symposium, and forwards the journal's history into its next century; may it be favourable.*

*Editor-in-Chief  
Prof. Jerzy Kruszewski MD, PhD*

PRIME MINISTER

*Warsaw, 17 January 2020*

*Dear Sirs,*

*Today we are celebrating the 100th anniversary of the Military Physician journal. I would like to express my respect and appreciation for all of you, gathered at the Military Institute of Medicine for this conference devoted to an exceptional journal.*

*After Poland regained its much desired independence, the need to ensure the professional development of military physicians became particularly important. To address this need, a journal was created to present articles on the latest medical achievements, good practices, and various solutions that the physicians taking care of our soldiers could use in their daily practice. Military Physician helped to disseminate knowledge and increase the competences of military medical personnel, both during times of peace, and war. It is the only Polish medical journal to be published continuously for a hundred years. Even though modern science offers many ways to expand medical knowledge, Military Physician deserves the appreciation and trust demonstrated by its readers.*

*This meeting provides an opportunity to thank all the people who helped create the journal over the years. We appreciate the work of the journal's originator, Lt. Col. Prof. Zdzisław Ambroży Dmochowski, as well as that of other editors-in-chief, members of the editorial board, and the authors of approximately 12 thousand articles published so far in Military Physician.*

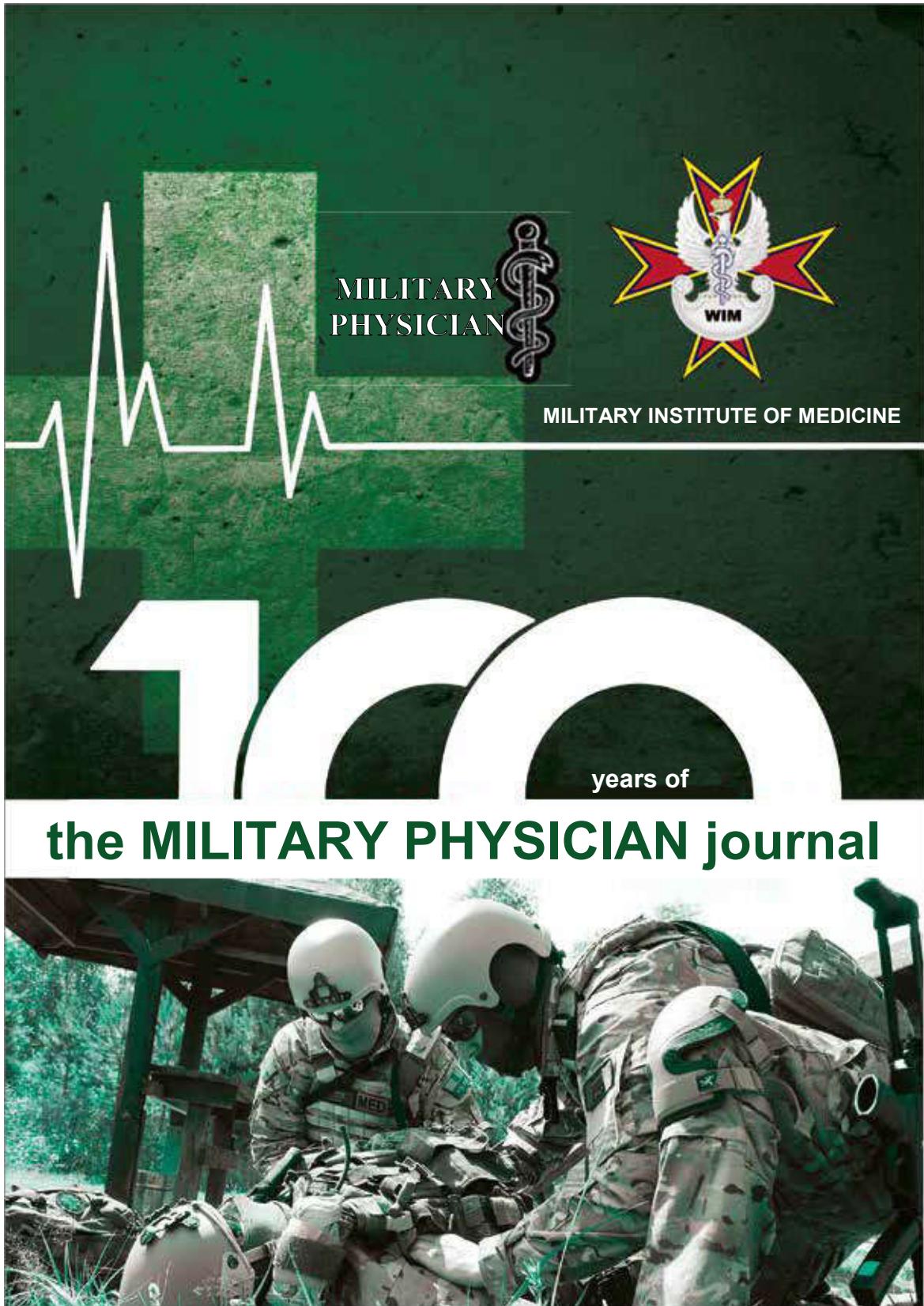
*Ladies and gentlemen, military healthcare is a service for our country. Thank you for your contribution to its development. I would like to express my congratulations on this impressive anniversary, and wish further success in the years to come.*

*Sincerely,*



*Mateusz Morawiecki*

***Participants of the scientific conference devoted to the Military Physician journal: “A hundred years of service for our country” at the Military Institute of Medicine***



**SCIENTIFIC CONFERENCE  
MILITARY PHYSICIAN**

**100 YEARS OF SERVICE FOR OUR  
COUNTRY**

**17 January 2020, 10:00**

Military Institute of Medicine in Warsaw  
128 Szaserów Street  
Main Assembly Hall, 5th floor



## CONFERENCE PROGRAMME

10:00

### Official opening

- *Welcome by Maj. Gen. Prof. Grzegorz Gielerak MD, PhD, Chairman of the Programme Council of the Military Physician journal*
- *Speeches by the guest speakers*
- *Speech by Prof. Jerzy Kruszewski MD, PhD*

10:30

### Session I

- *“Military healthcare until 1918: a historic outline” – Dr. Jan Tarczyński, head of the Józef Piłsudski Central Military Library in Warsaw*
- *“Polish physicians in the army of the Kingdom of Belgium following the November Uprising” – Assoc. Prof. Maciej Kledzik, PhD*
- *“History of medical self-government in the interbellum period” – Prof. Anna Marek, PhD*
- *“Military healthcare – modern perspective on addressing health needs” – Maj. Gen. Prof. Grzegorz Gielerak MD, PhD – head of the Military Institute of Medicine in Warsaw*

11:30

### Coffee break

12:00

### Session II

- *Military Physician – 100 years of serving our country – Danuta Augustynowicz*
- *“Professor Zdzisław Dmochowski – originator of the Military Physician journal” – Prof. Jerzy Kruszewski MD, PhD*
- *“Description of the secret issues of the Military Physician from 1965 to 1996” – Prof. Stanisław Ilnicki*

13:30

### Conference closing



***100 years for our country***  
 Maj. Gen. Prof. Grzegorz Gielerak MD, PhD  
 Head of the Military Institute of Medicine,  
 Chairman of the Programme Council  
 of Military Physician

*Military Physician, published continuously for 100 years, is one of the oldest Polish medical journals. The first publisher and originator of the journal was the Military Sanitary Council, established at the end of 1918 by the Ministry of Military Affairs. On 3 January 2020, the journal celebrates 100 years of its presence and its service for Poland, in collaboration with military health care. This centenary provides an opportunity to discuss the role of the journal and to emphasise its merits. Military Physician has grown into the structures of military healthcare; it has been with the readers in the field of combat, and has been there during their everyday work, both during armed conflicts and in peace. The journal has contributed to the formation of modern armed forces at various stages of their development. Since its beginning, the journal was designed to satisfy the educational needs of military physicians. After 1925, the range of topics in the published articles was extended to address the needs of the entire sanitary corps. The journal has also provided information about the latest achievements in the medicine across the world. During the Second World War, Military Physician was published in Scotland, creating a bridge between Poland and other countries. In the post-war period, the journal established its position as a leading publication of military healthcare.*

*The history of Military Physician is inseparably associated with the Ujazdowski Hospital in Warsaw, one of the largest and oldest military medical facilities in Poland. The graduates of the university at Ujazdów also had a significant influence on the development of the journal in the post-war period. They actively contributed to the prestige of this hospital at Szaserów Street. Nearly 20 years ago, the Military Institute of Medicine took over the tradition of the Ujazdowski Hospital and continued the mission of Military Physician, as the publisher of the journal.*

## **Our roots and today's reality**

*Prof. Jerzy Kruszewski MD, PhD,  
Editor-in-Chief of Military Physician*



*Military Physician is the third oldest Polish medical journal to be published under the same name. It is also the only Polish medical journal published continuously for the past 100 years, without a break during the Second World War.*

*Creating a journal for Polish military physicians was the idea of Lt. Col. Zdzisław Ambroży Dmochowski. He developed tasks for the Military Sanitary Council, and one of them was to publish a journal for military physicians. In the past 100 years, many outstanding military physicians have been editors-in-chief of Military Physician. The journal has featured approximately 12 thousand various articles, and the long list of authors includes the most prominent figures in Polish medicine.*

*At all times, Military Physician has contributed to the development and education of Polish physicians, primarily those employed by the military, by offering high quality content, and always promoting rational knowledge and new medical achievements useful in the daily practice of military physicians. It is particularly important nowadays, with the military physicians participating in military missions facing numerous new challenges, and increasingly often witnessing the highest professional levels of medical assistance in the army, under various conditions.*

*The journal has remained not only a source of information for them, but also a platform fostering the exchange of views. Apart from its educational impact, it has created an opportunity for authors to increase their scientific achievements.*

*The editors-in-chief of Military Physician have always faced problems. However, even in the difficult time of the Second World War, they could still find sufficient resources and engage people ready to continue the journal's tradition. They also coped during the uneasy post-war period. Paradoxically, the last 20 years has proved to be a particularly difficult time, with the decision makers in military healthcare questioning the purpose of publishing the journal. Unbelievable as it may seem, we faced the risk of ending the publication of the journal, as happened with many medical journals. Today, the character of Military Physician is being discussed, to ensure that it can provide the best possible assistance for military physicians in the era of the Internet and new legal regulations.*



***Military Physician***  
***100 years of service for our country***

*Danuta Augustynowicz*

*The history of Military Physician is inextricably connected to the history of Poland. The journal was published for the first time several months after Poland regained independence, then during the Second World War it provided a forum for physicians serving abroad, and in 1945 it was reinstated for the benefit of our country.*

*Military Physician has demonstrated qualities that enabled its continuance for a hundred years: carefully selected topics, high authors' qualifications and catering to the readers' needs through providing an opportunity for the development and constant acquisition of knowledge. Editors-in-chief and editorial boards, publishers and authors contributed greatly to the continuity of the journal's publication, through their passion and engagement. Since its beginning, the journal has demonstrated care for the future medical personnel, offering information for medical students, primarily the cadets from the Centre for Sanitary Education and the Military Medical Academy. At present, Military Physician still presents studies by young scientists and doctoral students of the Military Institute of Medicine. Its mission also includes integration of the military medical milieu, and promotion of the advances in the area of battlefield medicine.*

*Military Physician, for years closely associated with our institution, is also important for the employees of the Military Institute of Medicine. Many of them published their first works in the journal: studies on medicine, historical, biographical and organisational articles, or accounts of important events from the history of "hospital on Szaserów Street" at various stages of its activity as a medical, scientific and educational institution. It is a great joy for all of us that we can celebrate the 100th anniversary of the journal, and we hope its mission will be continued for years to come.*

## ***Message of Military Physician***

*Assoc. Prof. Stanisław Ilnicki MD, PhD*



*The publication of Military Physician on 3 January 1920 fulfilled the wish expressed on 20 July 1831 by General Karol Kaczkowski, the General Physician of the Polish Army during the November Uprising: “I call on you, military physicians, to bestow your studies on to me. (...) Let’s create a Military Medical Journal, one that will provide complete information to the public. (...) Case reports, presented in a concise, careful and diligent manner will be an invaluable treasure. An apt and prudent physician can make good use of them (...).*

*Published continuously for a hundred years, regardless of war and social turbulences, Military Physician has become a monumental chronicle of the achievements of Polish military healthcare.*

*Some of its pages have been filled by the luminaries of Polish medicine, others by physicians working in hospitals and military units. Both groups have left a permanent trace in the memory of generations, shaping the ethos of the profession of officer–physician.*

*I hope modern ranking-based marketing will not discourage authors from publishing their work in Military Physician. For young doctors it is a friendly space to practice their writing skill before publishing in the highest-ranking journals. For authors with an established scientific position, especially those who started with Military Physician, it is the right forum to present the mastery of ad usum delphini. There is no higher glory than to help to restore the high reputation of the journal where we started, to make a similar start possible for our successors.*

## About the hospital on Szaserów Street

*MILITARY INSTITUTE OF MEDICINE – CENTRAL CLINICAL HOSPITAL OF THE MINISTRY OF NATIONAL DEFENCE, referred to as “hospital on Szaserów Street”, is one of the biggest, highest-reference multispecialty healthcare institutions in Poland. It has been accredited by the Ministry of Health and it features ISO and AQUAP quality control systems. In the NATO member countries, this leading military hospital plays an important role in the country’s security system. It is a place where wounded soldiers and officers are treated. It is also an important training centre for medics, as well as a robust research facility. In Poland, our hospital plays this role. We treat patients, conduct scientific research, educate medical personnel and exchange experiences.*

*The hospital covers over 22 hectares, and the combined floor space of its buildings of 120 thousand square metres. Every year nearly 3 thousand employees in the 44 departments, wards and institutes offer help to approximately 100 thousand patients. Due to continuous investments, the Military Institute of Medicine can provide increasingly comprehensive medical services.*

### Our mission

**FOCUS ON THE PATIENT  
TO PROVIDE MODERN AND SAFE HEALTHCARE**

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# Timeline of "Lekarz Wojskowy"

## Kalendarium „Lekarza Wojskowego”

Halina Rudnicka,<sup>1</sup> Danuta Augustynowicz<sup>2</sup>

<sup>1</sup> Scientific Library; head: Anna Kot MSc

<sup>2</sup> Department of Support and Project Management, Military Institute of Medicine; head: Ariadna Bednarz MSc

**Abstract.** The aim of this article was to give an overview of dates and events important in the history of "Lekarz Wojskowy" and the teams which allowed the journal to exist. The timeline was based on issues published in the years 1920 to 1939, 1941 to 1946, 1945 to 2020 and materials from the Central Military Library.

**Keywords:** periodicals - history, 20<sup>th</sup> century history of medicine

**Streszczenie.** Celem pracy było zebranie dat i wydarzeń ważnych w historii „Lekarza Wojskowego” oraz zespołów, które tworzyły czasopismo. Kalendarium zostało opracowane na podstawie numerów z lat 1920-1939, 1941-1946 i 1945-2020 oraz materiałów pochodzących ze zbiorów Centralnej Biblioteki Wojskowej.

**Słowa kluczowe:** czasopisma - historia, historia medycyny XX wieku

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### 1920 A. 1

- |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N° 1  | Published on 3 January 1920.<br>[Subheading] weekly journal of military and general medicine<br>Editor-in-Chief: Jan Koelichen<br>Editorial Committee: Z. Dmochowski, L. Karwacki, Z. Radliński, Z. Szymanowski, Z. Raźniewski, S. Franciszek Różycki, R. Stankiewicz<br>Publisher: Military Sanitary Council<br>Editorial and Administration Office: Warsaw, Ujazdowski Hospital<br>Printout: A. Konarzewski and Co., Warsaw, 49 Wielka St. (opposite Żurawia St.) |
| N° 2  | Contains: Organisational decisions for the Military Sanitary Council                                                                                                                                                                                                                                                                                                                                                                                                |
| N° 3  | Contains: Internal regulations for the Military Sanitary Council                                                                                                                                                                                                                                                                                                                                                                                                    |
| N° 6  | Contains: Officer order no. 2. № 3212/San. In praise of military physicians<br>Signed: J. Piłsudski m.p. Commander-in-Chief                                                                                                                                                                                                                                                                                                                                         |
| N° 11 | Printout: Care Section of the Ministry of Military Affairs in Warsaw, 9 Tomackie St.                                                                                                                                                                                                                                                                                                                                                                                |
| N° 22 | Printout: Treatment and Education Facility for Disabled Soldiers 9 Tomackie St. – probably a continuation of the previous institution<br>Paid articles                                                                                                                                                                                                                                                                                                              |

### 1921 2

- |       |                                                                                                                                                                                                                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N° 1  | Changes in the Editorial Committee: Z. Dmochowski, S. F. Różycki, R. Stankiewicz left,<br>New members of the board: M. Eiger, S. Rudzki, S. Składkowski, Z. Sowiński, Z. Szymanowski, L. Zembrzuski, E. Żebrowski |
| N° 19 | Issue dedicated to the 100th anniversary of Napoleon's death                                                                                                                                                      |
| N° 41 | Military Sanitary Institute replaced the Military Sanitary Council<br>Wydawca: Ujazdowski Hospital, Military Sanitary Institute                                                                                   |
| N° 44 | Editorial and Administration Office: Warsaw, District Hospital no. 1, Military Sanitary Institute                                                                                                                 |

## 100<sup>TH</sup> ANNIVERSARY OF THE MILITARY PHYSICIAN JOURNAL

1922 3

**N° 1** [Subheading] none  
Frequency: monthly journal  
Editor-in-Chief: Władysław Osmolski  
Editorial Committee: O Bujwid, W. Horodyński, L. Karwacki, J. Koelichen, S. Malewicz, S. Rudzki, B. Sabat, S. Składkowski, Z. Sowiński, B. Szarecki, Z. Szymanowski, L. Zembrzuski, E. Żebrowski  
Administration: Warsaw, Military Sanitary Institute, Ujazdowski Hospital

**N° 3** Publisher: Military Sanitary Institute  
Editorial Office: 8 Ossolińskich St., flat 2

**N° 7** Editorial Office: 23 Batorego St.

1923 A. 4

Changes in the Editorial Committee: S. Malewicz left

1924 A. 5

**N° 1** Changes in the Editorial Committee: L. Zembrzuski left, new members: G. Szulc, B. Zakliński, I. Zieliński

**N° 2** Up to Issue 9, the editor-in-chief was T. Korzon, instead of W. Osmolski

**N° 9** Editorial and Administration Office: Military Sanitary Institute, 1 Piękna St.

1925 A. 6

**N° 1** [Subheading] monthly: organ of the officers of the Sanitary Corps in Active Military Service and Military Reserve  
Editorial Committee: O. Bujwid, W. Horodyński, A. Huszcza, B. Jakesch, L. Karwacki, J. Koelichen, J. Kollątaj-Szrednicki, T. Korzon, E. Lewenstern, E. Małachowski, W. Ostaszewski, L. Owczarewicz, O. Pilecki, W. Popławski, S. Rudzki, B. Sabat, S. Składkowski, W. Sokolewicz, Z. Sowiński, B. Szarecki, G. Szulc, F. Waga, L. Zembrzuski, B. Zakliński, E. Żebrowski, I. Zieliński  
Editorial and Administration Office: Military Sanitary Institute, 1 Piękna St.

**N° 4** New function of Editorial Office Secretary was created; the first Secretary was S. Konopka

**N° 5** An appendix was created: Bibliographic Notice of The Medical School for Officers

**N° 10** Editorial and Administration Office: Medical School for Officers, 47-A Górnosłaska St.

1926 A. 7

**Vol. 7** Changes in the Editorial Committee; new members: K. Karnicki, K. Polkowski, J. Rapczewski, S. Rouppert, Fr. Zwierzchowski  
**N° 1** Editorial and Administration Office: Medical School for Officers, Warsaw, 45 Górnosłaska St. Annual divided into two biannuals: Vol. 7 (January – June), Vol. 8 (July – December)

1927 A. 8

**Vol. 9** Vacancy for the position of editor-in-chief (10 months)

**N° 1** Changes in the Editorial Committee: Fr. Zwierzchowski left; new members: S. Hubicki, W. Rozmarynowski

1928 A. 9

**Vol. 11** [Subheading] monthly journal of medicine, hygiene and military healthcare: organ of the Officers of the Sanitary Corps in the Active Military Service and Military Reserve  
**N° 1** Changes in the Editorial Committee: B. Jakesch, E. Małachowski, W. Rozmarynowski left; new members: F. Białokur, A. Bylina, J. Drac, J. Garbowski, K. Kuligowski, M. Latkowski, S. Monczuński, M. Orłowski, W. Osmolski, O. Pęski, Z. Raźniewski, R. Śliwiński, W. Wieszeniewski, W. Zawadowski, M. Zienkiewicz  
Editorial and Administration Office: Medical School for Cadets, Warsaw, 45 Górnosłaska St.

1929 A. 10

**Vol. 13** [Subheading] bi-weekly journal of medicine, hygiene and military healthcare: organ of the Officers of the Sanitary Corps in the Active Military Service and Military Reserve  
**N° 1** Publisher: Health Department, Ministry of Military Affairs

1930 A. 11

**Vol. 15** Changes in the Editorial Committee, new member: J. Babecki

**Vol. 16** A co-published appendix "Therapeutic Notes" was added  
Editorial and Administration Office: Centre for Medical Training, 45 Górnosłaska St.

## 100<sup>TH</sup> ANNIVERSARY OF THE *MILITARY PHYSICIAN JOURNAL*

<b>1931 A. 12</b>	
<b>Vol. 17 N° 1</b>	Changes in the Editorial Committee: M. Latkowski, S. Monczuński, Z. Sowiński, R. Śliwiński, E. Żebrowski left A co-published appendix "Catalogue of the Library of the Medical Training Centre" was added
<b>1932 A. 13</b>	
<b>Vol. 19 N° 1</b>	The Editorial Committee was expanded Editor of the Military Healthcare section: J. Garbowski Editor of the Aviation Medicine section: A. Huszcza
<b>1933 A. 14</b>	
<b>Vol. 21 N° 5</b>	Issue dedicated to military healthcare, ed. by Col. Dr. J. Garbowski Editorial Committee: in Warsaw: J. Babecki, H. Becker, F. Białokur, K. Borczowski, R. Brzosko, A. Bylina, F. Czubalski, J. Drac, H. Gromadzki, W. Horodyński, S. Hubicki, T. Janiszewski, W. Kaliciński, W. Karnicki, L. Karwacki, J. Kawiński, J. Koelichen, J. Kołłątaj-Szrednicki, T. Korzon, S. Krupiński, K. Kuligowski, M. Michałowicz, K. Miszewski, S. Mozołowski, J. Nelken, R. Nitsch, W. Ostaszewski, L. Owczarewicz, R. Pawłowski, O. Pęski, J. Rapczewski, Z. Raźniewski, S. Roupert, S. Rudzki, B. Sabat, S. Składkowski, B., W. Sokolewicz, Szarecki, H. Szczodrowski, W. Wieszeniewski, A. Wojciechowski, M. Wowkonowicz, F. Zalewski, W. Zawadowski, B. Zakliński, L. Zembrzusi, Z. Żołędziowski; in Krakow: O. Bujawid, W. Gądzikiewicz, A. Maciag, J. Nadolski, S. Pieńkowski; in Lviv: A. Kończacki, W. Osmolski; in Łódź: W. Dzierżyński; in Poznań: T. Bętkowski, P. Gantkowski, T. Kucharski; in Przemyśl: F. Bałaszeskul; in Toruń: T. Sokolowski; in Vilnius: K. Karaffa-Korbutt, M. Werakso
<b>Vol. 22 N° 1</b>	[Subheading] bi-weekly journal of military healthcare, medicine and hygiene. Publisher: Health Department, Ministry of Military Affairs The title page included: Editor-in Chief: Assoc. Prof. Gustaw Szulz Editorial and Administration Office: Warsaw, 45 Gómośląska St.
<b>Vol. 23 N° 11-12</b>	Issue dedicated to Col. Prof. Aleksander Bylina, PhD, to commemorate many years of his scientific, military, medical and educational work at the Internal Ward of the School Hospital, Centre for Medical Training – a tribute from students
<b>1934 A. 15</b>	
<b>Vol. 24 N° 1</b>	Editor-in Chief: Stanisław Konopka The title page again included members of the Editorial Committee, with full names (previously only first letter of the first name was provided), military and academic degrees Editorial Committee: Col. Dr. Jan Garbowski, Col. Dr. Jan Kawiński, Col. Dr. Ksawery Maszadro, Col. Dr. Tadeusz Sokolowski, Col. Dr. Leon Owczarewicz, Lt. Col. Dr. Jerzy Babecki, Lt. Col. Dr. Jan Mintowt-Czyż, Lt. Col. Dr. Włodzimierz Missiuro, Lt. Col. Dr. Stanisław Orlewicz, Lt. Col. Dr. Stanisław Przychocki, Lt. Col. Dr. Franciszek Waga, Maj. Dr. Wilhelm Borkowski, Maj. Dr. Antoni Fiumel, Maj. Dr. Michał Rosnowski Secretary: Second Lt. Jerzy Eymont MD Administration Manager: Capt. Cyprian Głowiński
<b>1936</b>	
<b>Vol. 27 N° 5</b>	Secretary: Lt. Jan Zakrzewski MD
<b>1936</b>	
<b>Vol. 28 N° 5/8</b>	Issue dedicated to Gen. Stanisław Roupert due to the 10th anniversary of work as the Chief of the Military Healthcare
<b>1937</b>	
<b>Vol. 29 N° 1</b>	Editorial Committee: Col. Dr. Jerzy Babecki, Col. Dr. Jan Garbowski, Col. Dr. Jan Kawiński, Col. Dr. Ksawery Maszadro, Lt. Col. Dr. Jan Mintowt-Czyż, Lt. Col. Dr. Stanisław Orlewicz, Col. Dr. Leon Owczarewicz, Col. Dr. Tadeusz Sokolowski, Lt. Col. Dr. Antoni Fiumel, Lt. Col. Dr. Włodzimierz Missiuro, Lt. Col. Dr. Stanisław Przychocki, Lt. Col. Dr. Michał Rosnowski, Lt. Col. Dr. Franciszek Waga, Maj. Dr. Wilhelm Borkowski
<b>1938</b>	
<b>Vol. 31 N° 1</b>	[Subheading] monthly journal of military healthcare, medicine and hygiene. Published by the Health Department, Ministry of Military Affairs Administration Manager: Maj. Józef Piechura
<b>Vol. 32 N° 6</b>	Vacancy for the position of Editorial Office Secretary

## 100<sup>TH</sup> ANNIVERSARY OF THE MILITARY PHYSICIAN JOURNAL

1939

Vol. 33  
N° 1 Secretary: Lt. Dr. Franciszek Chmielewski

Vol. 34  
N° 2 The last issue of the pre-war edition, published on 1 August 1939.  
Editor-in-Chief: Lt. Col. Dr. Stanisław Konopka  
Editorial Committee: Col. Dr. Jerzy Babecki, Dol. Dr. Jan Garbowski, Col. Dr. Jan Kawiński, Col. Dr. Ksawery Maszadro, Lt. Col. Dr. Jan Mintowt-Czyż, Lt. Col. Dr. Stanisław Orlewicz, Col. Dr. Leon Owczarewicz, Col. Dr. Tadeusz Sokolowski, Lt. Col. Dr. Antoni Fiumel, Lt. Col. Dr. Włodzimierz Missiuro, Lt. Col. Dr. Stanisław Przychocki, Lt. Col. Dr. Michał Rosnowski, Lt. Col. Dr. Franciszek Waga, Maj. Dr. Wilhelm Borkowski  
Secretary: Lt. Dr. Franciszek Chmielewski  
Administration Manager: Maj. Józef Piechura

### Journal associated with Military Physician

*Military Physician* referring to the pre-war Polish edition of the journal was published in Great Britain in the years 1941-1946

1941-1942

Vol. 34  
N° 1 Published in July 1941  
[Subheading] journal of military healthcare, medicine and hygiene. Published by the Polish Military Medical Society in the United Kingdom of Great Britain (TNL WP). Below: "Journal of the Polish Army Medical Corps Organ of the Polish Military Medical Society"  
Editor-in-Chief: Zygmunt Żołędziowski  
Editorial Committee: Leonard Chat MD, Dr. Zbigniew Godłowski, Dr. Stefan Strumiński  
Editorial Committee: Jerzy Babecki, Kazimierz Dębicki, Jerzy Dekański, Henryk Długosz, Jerzy Fegler, Józef Felix, Antoni Fidler, Antoni Fiumel, Władysław Gergovich, Jan Golba, Bohdan Hejduk, Jarosław Iwaszkiewicz, Antoni Jurasz, Jan Kochanowski, Włodzimierz Koskowski, Vladislav Kruta, Adam Kurtz, Józef Leoszko, Józef Lubczyński, K. Macháček, Tadeusz Mann, Zdzisław Malkiewicz, Bolesław Pawłowski, Tadeusz Rogalski, Jakub Rostowski, Edward Rużyłło, Józef Skłádal, Tadeusz Sokolowski, Wiktor Tomaszewski, Stanisław Trepkowski, Czesław Uhma, Antoni Wadoń, Władysław Zakrzewski, Mirosław Zaleski  
Editorial and Administration Office: *Military Physician*, G. P. O. Perth P/75 (Scotland)

Vol. 34  
N° 3 Edward Rużyłło left the Editorial Committee

1942-1944

Vol. 35  
N° 1 Editorial Board: Leonard Chat MD, Dr. Zbigniew Godłowski, Dr. Józef Mester

Vol. 35  
N° 3 Editorial Committee: Jarosław Iwaszkiewicz, Henryk Kompt, Stefan Strumiński, Wiktor Tomaszewski

1945

Vol. 36  
N° 1 Changes in the Editorial Committee: Jan Golba, Józef Leoszko, Józef Lubczyński left; new members: Czesław Czarnowski, Tadeusz Falkiewicz, Emil Niedźwirski, Jan Ruszkowski, Ignacy Spitzer, Adam Straszyński  
Editorial and Administration Office: *Military Physician* – Journal of the Pol. A.M.C. The Paderewski Hospital, Crewe Road, Edinburgh P/94-Polish Forces

Vol. 36  
N° 2-3 Editor-in-Chief: Henryk Kompf  
Co-editors: Dr. Jarosław Iwaszkiewicz, Dr. Wiktor Tomaszewski, Emil Valis MD

1946

Vol. 37  
N° 2-3 The last issue of the Edinburgh edition, published in December 1946.  
Editorial Committee: Dr. Jerzy Babecki, Dr. Czesław Czarnowski, Dr. Kazimierz Dębicki, Dr. Jerzy Dekański, Dr. Henryk Długosz, Dr. Tadeusz Falkiewicz, Dr. Jerzy Fegler, Dr. Józef Felix, Dr. Antoni Fidler, Dr. Antoni Fiumel, Dr. Władysław Gergovich, Dr. Zbigniew Godłowski, Dr. Bohdan Hejduk, Dr. Antoni Jurasz, Dr. Włodzimierz Koskowski, Dr. Vladislav Kruta, Dr. K. Macháček, Dr. Tadeusz Mann, Dr. Zdzisław Malkiewicz, Dr. Emil Niedźwirski, Dr. Tadeusz Rogalski, Dr. Jakub Rostowski, Dr. Jan Ruszkowski, Dr. Józef Skłádal, Dr. Ignacy Spitzer, Dr. Adam Straszyński, Dr. Czesław Uhma, Dr. Antoni Wadoń  
Co-editors: Dr. Jarosław Iwaszkiewicz, Dr. Wiktor Tomaszewski, Dr. Emil Valis

1945/1946

N° 1 Published on 1 January 1945 in Lublin  
Editors in charge: Brig. Gen. M. Moguczy, Secretary in charge: Lt. Col. Dr. K. Mikulewicz MD  
Editorial Committee: Brig. Gen. Prof. A. Szacki, Brig. Gen. W. Nowodworski, Col. A. Salomonowicz, Col. D. Tielkow, Lt. Col. L. Samet, Prof. Dr. L. Hirszfeld  
A bi-monthly published by the Healthcare Department of the Ministry of National Defence  
Publisher: Sanitary Chief in the Polish Army, Lublin

## 100<sup>TH</sup> ANNIVERSARY OF THE *MILITARY PHYSICIAN JOURNAL*

N° 3-4	Changes in the Editorial Committee: Secretary Dr. A. Kaczurba Editorial Committee: Brig. Gen. Prof. A. Szacki, Brig. Gen. W. Nowodworski, Lt. Col. Dr. L. Samet, Col. A. Salomonowicz, Col. Szejnis, Col. D. Tielkow, Maj. Dr. A. Ziemiec MD, Maj. Libow, Prof. L. Hirszfeld MD, PhD; Prof. J. Węgieńko MD, PhD Publisher: Healthcare Department, Ministry of National Defence Editorial and Administration Office: Lublin, Catholic University building, Chair of Military Medicine
N° 5-6 and 1-2/1946	The editorial office was moved to Warsaw, Koszykowa St.
<b>1947</b>	
N° 1	Editor-in-Chief: Brig. Gen. Prof. Bolesław Szarecki MD, PhD Secretary in charge: Lt. Col. Dr. A. Kaczurba Editorial Committee: Lt. Col. M. Fejgin MD, Lt. Col. L. Gecow MD, Lt. Col. Fr. Goertz MD, Dr. A. Huszcza MD, Lt. Col. J. Karwowski MD, Dr. S. Konopka, Lt. Col. Assoc. Prof. Wł. Ostrowski MD, PhD; Col. L. Przysuski MD, Col. Dr. L. Samet, Maj. A. Stańczyk MD, Col. L. Strehl MD, Col. W. Zajączkowski MD Frequency: quarterly Summaries from foreign journals were included
A. 23 N°2	The information about the number of the annual, starting with A. 1 from 1920, excluding the Edinburgh edition, was provided Information on the title page: "The journal is managed by the Editorial Committee" Head of the Editorial Committee: Brig. Gen. Prof. B. Szarecki MD, PhD Secretary in charge: Lt. Col. Dr. A. Kaczurba
<b>1948 A. 24</b>	
N° 2	Secretary in charge: Capt. T. Roźniatowski MD
N° 3	Beginning of content classification, abstracts in Polish, Russian, French and English, reports of scientific associations First paid advertisements
<b>1950</b>	
A. 26 N° 1	Frequency: monthly journal Publisher: Healthcare Department, Chief Quartermaster of the Polish Army
<b>1954</b>	
A. 30 N° 1	Publisher: Healthcare Department, Chief Rear Management Office of the Polish Army
<b>1957</b>	
A. 33 N° 1	Publisher: Healthcare Department, Chief Quartermaster of the Polish Army
A. 33 N° 7	Publisher: Healthcare Department of the Polish Army
<b>1959</b>	
A. 35 N° 1	Editor-in-Chief: Col. Assoc. Prof. S. Bober MD, PhD The list of Editorial Committee members was again provided on the title page: Maj. Dr. S. Czaplicki (Editorial Office Secretary), Col. Dr. J. Eymont, Lt. Col. Dr. T. Kisieliński MD, Capt. Dr. J. Łangowoj (editor in charge), Lt. Col. Dr. T. Obara, Col. Dr. K. Płoński, Lt. Col. Dr. T. Roźniatowski, Maj. S. Ryłko MSc, Col. Dr. P. Zagórski, Col. Dr. W. Zagórski. Editorial Office: Warsaw, 2nd Central Clinical Hospital WAM, Koszykowa St. Classification of the content according to the Good Practice Code (recommended by UNESCO) was introduced, including 3 types: original, review and clinical articles.
<b>1960</b>	
A. 36 N° 1	Changes in the Editorial Committee, new members: Dr. S. Bogustawski, Dr. S. Haduch MD, Dr. S. Klonowicz MD
<b>1962</b>	
A. 38 N° 1	Head of the Editorial Committee: Col. Assoc. Prof. S. Bober MD, PhD Płoński K. "Forgotten anniversary" [17 years after reinstatement of <i>Military Physician</i> ]
<b>1963</b>	
A. 39 N° 1	Dr. A. Dolatowski MD joined the Editorial Committee

## 100<sup>TH</sup> ANNIVERSARY OF THE MILITARY PHYSICIAN JOURNAL

<b>1964</b>	
A. 40 N° 1	Assoc. Prof. W Barcikowski MD, PhD joined the Editorial Committee
A. 40 N° 10	Jubilee Issue – 40 years of <i>Military Physician</i> (special cover, account of jubilee celebrations) Commemorative articles: C. Pótorak: 40 <sup>th</sup> anniversary of the <i>Military Physician</i> journal St. Bober, T. Roźniatowski, J. Łangowoj: History of our journal Febr: First publisher of <i>Military Physician</i>
N° 12	S. B[ober] Our 40 <sup>th</sup> anniversary (article about <i>Military Physician</i> )
<b>1965</b>	
A. 41 N° 1	Changes in the Editorial Committee: Dr. P. Zagórski left; Dr. M. Jesionowski DDS became the Deputy Head of the Editorial Board; new members: J. Rzelski DMV, Assoc. Prof. Z. Żółtowski MD, PhD
<b>1966</b>	
A. 42 N° 1	Publisher: Healthcare Department of the Polish Army
<b>1967</b>	
A. 43 N° 1	Changes in the Editorial Committee, Lt. Col. Dr. S. Bogusławski and Col. Dr. K. Płoński MD left, new members: Lt. Col. A. Czerwiński, Col Dr. H. Grass, Maj. Dr. J. Łańcucki
<b>1968</b>	
A. 44 N° 1	Publisher: Chief of the Healthcare Department, Ministry of National Defence
<b>1969</b>	
A. 45 N° 1	Changes in the Editorial Committee: Cmdr. Prof. A. Dolatowski MD, PhD left, Col. Assoc. Prof. Cz. Pótorak MD, PhD joined
<b>1970</b>	
A. 46 N° 11	Issue commemorating Col. Prof. Stanisław Bober MD, PhD (died 07/06/1970)
A. 46 N° 12	Head of the Editorial Committee: Col. Assoc. Prof. Sylwester Czaplicki MD, PhD
<b>1972</b>	
A. 48 N° 1	Editorial Committee: Col. Assoc. Prof. M. Jesionowski MD, PhD (Deputy Head of the Editorial Committee), Lt. Col. Dr. J. Łangowoj (editor), Krystyna Walczak (secretary) Consultation Council: Brig. Gen. Prof. W. Barcikowski MD, PhD, Col. Assoc. Prof. J. Bończak MD, PhD, Col. Dr. J. Drapiewski MD, Brig. Gen. Dr. J. Ejmont MD, Col. Prof. T. Kisieliński MD, PhD, Lt. Col. Dr. J. Łańcucki MD, Col. Dr. T. Obara MD, Col. Assoc. Prof. T. Orłowski MD, PhD, Col. Dr. T. Roźniatowski, Col. S. Ryłko MSc, Col. Prof. W. Zagórski MD, PhD, Col. Assoc. Prof. Z. Żółtowski MD, PhD
<b>1973</b>	
A. 49 N° 1	Brig. Gen. Prof. W. Barcikowski MD, PhD left the Consultation Council
<b>1974</b>	
A. 50 N° 6	50 <sup>th</sup> anniversary of <i>Military Physician</i> – jubilee cover Jubilee article: J. Łangowoj: Golden Jubilee of <i>Military Physician</i>
<b>1975</b>	
A. 51 N° 1	Brig. Gen. Prof. J. Ejmont MD, PhD and Col. Dr. T. Roźniatowski left the Consultation Board
<b>1976</b>	
Vol. 52 N° 1	Cmdr. Prof. K. Ulewicz MD, PhD joined the Consultation Council

## 100<sup>TH</sup> ANNIVERSARY OF THE *MILITARY PHYSICIAN* JOURNAL

<b>1977</b>	
<b>Vol. 53 N° 5</b>	[Subheading] monthly journal of the Military Healthcare
<b>1978</b>	
<b>Vol. 54 N° 1</b>	[Subheading] journal of the Military Healthcare New Head of the Editorial Committee: Col. Prof. T. Orłowski MD, PhD
<b>1979</b>	
<b>Vol. 55 N° 1-2</b>	Issues have double numbers (6 issues per year) Col. Prof. W. Zagórski MD, PhD left the Consultation Council
<b>1981</b>	
<b>Vol. 57 N° 1-2</b>	Cmdr. Prof. S. Klajman MD, PhD joined the Consultation Council
<b>1984</b>	
<b>Vol. 60 N° 1-2</b>	Changes in the Consultation Council: Col. Prof. T. Kisieliński MD, PhD, Brig. Gen. Assoc. Prof. T. Obara MD, PhD and Col. Prof. Z. Żółtowski MD, PhD left; new members: Col Prof. J. Derecki MD, PhD, Col. Dr. A. Kaliwoska MD, Col. Prof. Z. Onisk MD, PhD and Col. Prof. S. Rump MD, PhD
<b>Vol. 60 N° 5-6</b>	Jubilee Issue <i>Military Physician</i> – 60 years of service Commemorative articles: J. Łangowoj: " <i>Military Physician</i> – 60 years of service" J. Łangowoj: " <i>Military Physician</i> . Important dates and events in 60 years of the journal's history"
<b>1985</b>	
<b>Vol. 61 N° 1-2</b>	Changes in the Consultation Council: Col. Prof. J. Derecki MD, PhD, Col. Dr. Pharm. S. Ryłko left; new members: Col Prof. E. Dziuk MD, PhD, Col. J. Grejbus MD
<b>1988</b>	
<b>Vol. 64 N° 1-2</b>	Deputy Head of the Editorial Committee: Col. Assoc. Prof. E. Stanowski MD, PhD
<b>1989</b>	
<b>Vol. 65 N° 1-2</b>	Brig. Gen. Prof. J. Bończak MD, PhD, Col. Prof. Z. Orski MD, PhD left the Consultation Council
<b>1991</b>	
<b>Vol. 67 N° 1-2</b>	[Subheading] monthly journal of the Military Healthcare Published since 3 January 1920 Head of the Editorial board: Col. Assoc. Prof. E. Stanowski MD, PhD Deputy Head: Col. Prof. Z. Dumański MD, PhD Editor-in-Chief: vacancy Secretary: K. Szuman Consultation Council: Col. Prof. M. Cholewa MD, PhD, Col. Dr. J. Drapiewski MD, Col. Prof. E. Dziuk MD, PhD, Col. J. Grejbus MD, Brig. Gen. Dr. A. Kaliwoska MD, Retired Col. Prof. J. Łańcucki, MD, PhD, Col Prof. S. Rump MD, PhD, Col. Prof. B. Stawarz MD, PhD Editorial Committee expressed appreciation for Col. Prof. Sylwester Czaplicki MD, PhD for 20 years of holding the eminent and demanding position of the Head of the Editorial Committee
<b>1992</b>	
<b>Vol. 68 N° 1-2</b>	Editor-in-Chief: Maj. Piotr Kobylecki MD Changes in the Consultation Council: Col. Dr. J. Drapiewski MD, Retired Col. Prof. J. Łańcucki MD, PhD and Col. Prof. S. Rump MD, PhD left; new members: Col. Prof. J. Faff MD, PhD, Col. Prof. Z. Rybicki MD, PhD, Col. Dr. A. Trybusz MD
<b>1993</b>	
<b>Vol. 69 N° 1-2</b>	Editorial Office: 00-909 Warsaw – 60 243A Niepodległości Avenue
<b>1995</b>	
<b>Vol. 71 N° 1-2</b>	Brig. Gen. Prof. H. Chmielewski MD, PhD, Col. Prof. J. Kędziora MD, PhD, Col. Prof. M. Kłos MD, PhD, Col. Prof. M. Kwarecki MD, PhD, Prof. T. Tylman MD, PhD, Col. A. Wojciechowski MPharm joined the Consultation Board

## 100<sup>TH</sup> ANNIVERSARY OF THE MILITARY PHYSICIAN JOURNAL

1997

Vol. 73  
N° 1-2 Editorial Office: 00-909 Warsaw – 60 128 Szaserów St.

Vol. 73  
N° 3-4 Head of the Editorial Committee: Col. Prof. Marian Cholewa  
Deputy Head: Col. Prof. Marek Maruszyński  
Editors: Lt. Col. Piotr Kobylecki MD  
Secretary: Krystyna Szuman  
Consultation Council: Col. Prof. K. Chomiczewski MD, PhD, Brig. Gen. Prof. H. Chmielewski MD, PhD, Col. Prof. E. Dziuk MD, PhD, Brig. Gen. Dr. A. Kaliwoska MD, Col. Prof. J. Kędziora MD, PhD, Col. Prof. K. Klukowski MD, PhD, Col. Prof. M. Klos MD, PhD, Col. Prof. Z. Rybicki MD, PhD, Col. Prof. B. Stawarz MD, PhD, Col. Dr. A. Trybusz MD, Col. Prof. D. Tylman MD, PhD, Col. A. Wojciechowski MPharm

1998

Vol. 74  
N° 1-2 [Subheading] scientific journal of the Military Healthcare

1999

Vol. 75  
N° 1-2 Editor-in-Chief: Col. Prof. Marian Cholewa  
Deputy Editor-in-Chief: Marek Maruszyński  
Editor: vacancy  
Secretary: Krystyna Szuman  
Head of the Consultation Council: Brig. Gen. Dr. Andrzej Trybusz MD  
Changes in the Consultation Council: Brig. Gen. Prof. H. Chmielewski MD, PhD, Brig. Gen. Dr. A. Kaliwoska MD, Col. Prof. J. Kędziora MD, PhD, Prof. B. Stawarz MD, PhD, Prof. T. Tylman MD, PhD and Col. A. Wojciechowski Mpharm left;  
new members: Prof. J. P. Dubiel MD, PhD, Col. Dr. S. Ilnicki MD, Col. Dr. S. Magier MD, Prof. P. Zaborowski MD, PhD

Vol. 75  
N° 5-6 75<sup>th</sup> anniversary of the *Military Physician* journal  
New graphic design and publisher: Blackhorse

Vol. 75  
N° 9-12 Military Physician. Official Organ of the Section of Military Physicians at the Polish Medical Society, Scientific journal of the Polish Army Healthcare  
Editor-in-Chief: Tadeusz Plusa  
New graphic design and publisher: MEDPRESS

2000

Vol. 76  
N° 1-2 [Subheading]: scientific journal of the Polish Army Healthcare  
Editor-in-Chief: Col. Prof. Tadeusz Plusa MD, PhD  
Deputy Editors-in-Chief: Assoc. Prof. Karina Jahnz-Różyk MD, PhD, Col. Prof. Marek Maruszyński MD, PhD  
Editor-in-Chief: Capt. Piotr Słomski MD  
Changes in the Consultation Council: Prof. J. P. Dubiel MD, PhD, Col. Dr. S. Ilnicki, MD, Col. Prof. M. Klos MD, PhD, Col. Prof. J. Kruszewski MD, PhD, Col. Assoc. Prof. G. Krzymański MD, PhD, Col. Dr. S. Magier MD, Col. Prof. W. Marczyński MD, PhD, Prof. E. Stanowski MD, PhD and Col. Prof. P. Zaborowski MD, PhD left;  
new members: Prof. J. Adamus MD, PhD, Col. Prof. M. Cholewa MD, PhD, Col. Prof. R. Goś MD, PhD, Col. Assoc. Prof. W. Kozłowski MD, PhD, Col. Assoc. Prof. A. Ligęziński MD, PhD  
Publisher: MEDPRESS  
Frequency: quarterly

2001

Vol. 77  
N° 1 Head of the Consultation Council: Brig. Gen. Dr. Andrzej Trybusz MD  
New members: Col. Prof. J. Kruszewski MD, PhD, Brig. Gen. Prof. J. Gil MD, PhD, Col. Prof. A. Denys MD, PhD, Col. Prof. T. Domżał MD, PhD, Col. Assoc. Prof. G. Krzymański MD, PhD, Col. Assoc. Prof. W. Marczyński MD, PhD, Col. Assoc. Prof. W. Piechota MD, PhD, Prof. A. Stankiewicz MD, PhD  
Publisher: Section of Military Physicians at the Polish Medical Society

2002

Vol. 78  
N° 1 Col. Prof. S. Ilnicki, MD, PhD, Col. Assoc. Prof. H. Zieliński MD, PhD joined the Board

## 100<sup>TH</sup> ANNIVERSARY OF THE *MILITARY PHYSICIAN JOURNAL*

### 2003

**Vol. 79  
N° 1** Head of the Consultation Council: Brig. Gen. Dr. Janusz Adamczyk MD; former Head of the Consultation Council, Brig. Gen. Dr. Andrzej Trybusz MD became its member

### 2004

**Vol. 80  
N° 1** Editor-in-Chief: Col. Prof. Tadeusz Płusa MD, PhD  
Deputy Editor-in-Chief: Prof. Karina Jahnz-Różyk MD, PhD  
Editors: Maj. Dr. Tomasz Targowski MD, Grażyna Gołąb MSc  
Editorial Board replaced the Consultation Council; Brig. Gen. Prof. Marek Maruszyński MD, PhD  
Prof. W. Baranowski MD, PhD, Col. Prof. M. Brocki MD, PhD, Col. Assoc. Prof. A. Chciałowski MD, PhD,  
Col. Prof. M. Janiak MD, PhD, Prof. A. Jung MD, PhD, Col. Prof. D. Jurkiewicz MD, PhD, Col. Prof. E. Stanowski MD, PhD,  
Col. Prof. C. Szczyluk MD, PhD and Prof. Z. Wańkowicz MD, PhD joined the Board

### 2005

**Vol. 81  
N° 1** [Subheading] Official Organ of the Section of Military Physicians at the Polish Medical Society: scientific journal of the Military Institute of Medicine  
Editor-in-Chief: Ewa Babiej MSc

### 2006

**Vol. 82  
N° 1** Dr. Ewa Wąsak-Szulkowska MD joined the Board  
Publisher: Military Institute of Medicine

### 2007

**Vol. 83  
N° 1** Head of the Editorial Board: Brig. Gen. Prof. Jan K. Podgórski MD, PhD  
Brig. Gen. Prof. M. Maruszyński MD, PhD joined the Board; brig. Gen. Dr. Andrzej Trybusz MD left the Board

### 2008

**Vol. 86  
N° 1** Head of the Editorial Board: Prof. Edward Stanowski MD, PhD  
Members: Prof. W. Baranowski MD, PhD, Assoc. Prof. A. Chciałowski MD, PhD, Prof. M. Cholewa MD, PhD,  
Prof. E. Dziuk MD, PhD, Prof. J. Gil MD, PhD, Prof. A. Jung MD, PhD, Prof. D. Jurkiewicz MD, PhD, Prof. L. Kubik MD,  
PhD, Prof. W. Kozłowski MD, PhD, Prof. G. Krzymański MD, PhD, Prof. K. Kwiatkowski MD, PhD, Prof. M. Maruszyński  
MD, PhD, Assoc. Prof. R. Olszański MD, PhD, Assoc. Prof. W. Piechota MD, PhD, Prof. Z. Rybicki MD, PhD, Prof. K. Sułek  
MD, PhD, Prof. C. Szczyluk MD, PhD, Prof. Z. Wańkowicz MD, PhD, Assoc. Prof. H. Zieliński MD, PhD  
Editorial Committee: (Editor-in-Chief) Col. Prof. Tadeusz Płusa MD, PhD  
Deputy Editor-in-Chief: Prof. Karina Jahnz-Różyk MD, PhD  
Member: Lt. Col. Assoc. Prof. Tomasz Targowski MD, PhD  
Issue: 2, 3, 4 – combined

### 2009

**Vol. 87  
N° 1** [Subheading] quarterly: Official Organ of the Section of Military Physicians at the Polish Medical Society: scientific journal of the Military Institute of Medicine  
Editor-in-Chief: Prof. Jerzy Kruszewski MD, PhD  
Deputy Editors-in-Chief: Col. Assoc. Prof. Krzysztof Korzeniewski MD, PhD, Lt. Col. Ireneusz Kantor MD, PhD  
Lt. Col. Dr. Piotr Rapiejko MD  
Editorial Office: Military Institute of Medicine, 128 Szaserów St., Warsaw  
Publisher: Practical Medicine (Medycyna Praktyczna), 2 Rejtana St., Kraków  
Programme Council and Review Committee were established; the Head was present Maj. Gen. Prof. Grzegorz Gielerak MD, PhD, Head of the Military Institute of Medicine  
Since 2009, annuals are available online at: [www.mp.pl/lekarzwojskowy/archiwum](http://www.mp.pl/lekarzwojskowy/archiwum)

### 2010

**Vol. 88  
N° 1** On 10/11/2009 a member of the Programme Council, Prof. Dr. Leszek Kubik MD, PhD passed away.

## 100<sup>TH</sup> ANNIVERSARY OF THE MILITARY PHYSICIAN JOURNAL

2011

**Vol. 89  
N° 1** Assoc. Prof. Stanisław Niemczyk MD, PhD joined the Programme Council  
1920–2010 Jubilee of the *Military Physician* (jubilee cover)  
Symposium "90 years of *Military Physician*", Warsaw, 29/09/2010  
J. Kruszewski: "90<sup>th</sup> anniversary of the *Military Physician* journal"  
M. Gawrysiak: "Different aspects of *Military Physician*"  
M. Abramowicz, M. D. Gawrysiak, J. Kruszewski: "*Military Physician* as a military and medical journal"  
D. Augustynowicz "90 years of *Military Physician* – our beginnings"

2012

**Vol. 90  
N° 1** Brig. Gen. Prof. Andrzej Wiśniewski MD, PhD left the Programme Council

2013

**Vol. 91  
N° 1** Deputy Editor-in-Chief: Prof. Marek Maruszyński MD, PhD

2015

**Vol. 93  
N° 1** Editor-in-Chief: Prof. Jerzy Kruszewski MD, PhD  
Deputy Editors-in-Chief: Col. Assoc. Prof. Krzysztof Korzeniewski MD, PhD, Prof. Marek Maruszyński MD, PhD  
Lt. Col. Dr. Piotr Rapiejko MD  
Secretary: Ewa Jędrzejczak  
Programme Council Members  
Head: Grzegorz Gielerak – Head of the Military Institute of Medicine  
Members: Massimo Barozzi (Italy), Wiesław W. Jędrzejczak (Poland), Dariusz Jurkiewicz (Poland), Paweł Kaliński (USA), Frederick C. Lough (USA), Marc Morillon (Belgium), Arnon Nagler (Israel), Stanisław Niemczyk (Poland), Krzysztof Paśnik (Poland), Daniel Schneditz (Austria), Zofia Wańkowicz (Poland)  
The journal is available in the Internet in Polish and English language versions  
Website: [www.lekarzwojskowy.pl](http://www.lekarzwojskowy.pl)

2016

**Vol. 94  
N° 1** Changes in the Programme Council: Nihad EL-Ghoul (Palestine), Claudia E. Frey (Germany), Anna Hauska-Jung (Poland), Stanisław Ilnicki (Poland), Francis J. Ring (UK), Tomasz Rozmysłowicz (USA), Daniel Schneditz (Austria), Brenda Wiederhold (USA), Piotr Zaborowski (Poland) joined the Council

2017

**Vol. 95  
N° 1** Changes in the Programme Council: Elspeth Cameron Ritchie (USA), Marek Rudnicki (USA), Eugeny Tishchenko (Belarus) joined the Council

2018

**Vol. 96  
N° 1** Deputy Editor-in-Chief: Assoc. Prof. Andrzej Chciałowski MD, PhD

2019

**Vol. 98  
N° 1** Editor-in-Chief: Prof. Jerzy Kruszewski MD, PhD  
Deputy Editors-in-Chief: Col. Prof. Krzysztof Korzeniewski MD, PhD, Assoc. Prof. Andrzej Chciałowski MD, PhD,  
Dr. Piotr Rapiejko MD  
Secretary: Ewa Jędrzejczak MSc  
Present Programme Council Members  
Head: Grzegorz Gielerak – Head of the Military Institute of Medicine  
Members: Massimo Barozzi (Italy), Nihad El-Ghoul (Palestine), Claudia E. Frey (Germany), Anna Hauska-Jung (Poland), Stanisław Ilnicki (Poland), Wiesław W. Jędrzejczak (Poland), Dariusz Jurkiewicz (Poland), Paweł Kaliński (USA), Frederick C. Lough (USA), Marc Morillon (Belgium), Arnon Nagler (Israel), Stanisław Niemczyk (Poland), Krzysztof Paśnik (Poland), Tomasz Rozmysłowicz (USA), Daniel Schneditz (Austria), Zofia Wańkowicz (Poland), Brenda Wiederhold (USA), Piotr Zaborowski (Poland)  
Editorial Office: Military Institute of Medicine, 128 Szaserów St., 04-141 Warsaw  
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# Content description of *Lekarz Wojskowy* secret issues, 1965 to 1989

Charakterystyka zawartości tajnych zeszytów „Lekarza Wojskowego”, 1965-1989

**Stanisław Ilnicki**

Department of Psychiatry, Combat Stress and Psychotraumatology, Central Clinical Hospital of the National Ministry of Defence the Military Institute of Medicine in Warsaw; head: Col. Radosław Tworus MD, PhD.

**Abstract.** Beside the main issue of the *Lekarz Wojskowy* (LW) magazine, there was also a secret edition, published in the period of 1964–1989, intended to train military medical personnel in case of war. In total, 40 issues of the secret version of LW were published, including 504 papers written by experts in various areas of both military and clinical medicine. The aim of this article is as follows: (1) an analysis of the subject of those papers according to particular disciplines of military medicine; (2) a comparison of their content structure in three political and social periods: 1965–1969, 1970–1979 and 1980–1989, and (3) a presentation of detailed issues raised in the LW secret edition. The results: (1) most papers concerned the Armed Forces' Healthcare Organization (OOZW) – 27.5%, hygiene and epidemiology – 19.2%, field surgery and general medicine – 17.9% in total, and social medicine – 15.5%; (2) over the years, the share of papers referring to the OOZW remained large, while those on military hygiene and epidemiology were on the decline, and at the same time the share of field surgery, general medicine and social medicine papers was growing; and (3) publications presented in the LW secret issues are a valuable source of information on the history of Polish military healthcare system. These publications are important enough to be digitalized in order to be integrated into the scientific data circulation and prevented from destruction.

**Keywords:** Military medicine history, secret *Lekarz Wojskowy*

**Streszczenie.** Obok głównego wydania „Lekarza Wojskowego” (LW) w latach 1964–1989 wydawana była jego tajna edycja, przeznaczona do szkolenia personelu wojskowej służby zdrowia na wypadek wojny. Łącznie ukazało się 40 zeszytów tajnego LW, zawierających 504 prace specjalistów różnych dziedzin medycyny wojskowej i klinicznej. Celem artykułu jest: (1) analiza tematyki tych prac według działów medycyny wojskowej, (2) porównanie ich struktury tematycznej w trzech okresach polityczno-społecznych: 1965–1969, 1970–1979 i 1980–1989, oraz (3) prezentacja szczegółowych zagadnień poruszanych w tajnej edycji LW. Wyniki. (1) Najwięcej prac dotyczyło organizacji ochrony zdrowia wojsk (OOZW) – 27,5%, higieny i epidemiologii – 19,2%, chirurgii i interny polowej – łącznie 17,9%, oraz medycyny społecznej – 15,5%. (2) Na przestrzeni lat utrzymywał się duży udział prac z zakresu OOZW, zmniejszał się odsetek prac z zakresu higieny i epidemiologii wojskowej, zwiększał się udział prac dotyczących chirurgii i interny polowej oraz medycyny społecznej. (3) Publikacje tajnego LW stanowią cenne źródło do historii polskiej wojskowej służby zdrowia. Zastępują na digitalizację w celu włączenia ich do obiegu naukowego i ochrony przed zniszczeniem.

**Słowa kluczowe:** „Lekarz Wojskowy” tajny, historia medycyny wojskowej

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No conflicts of interest were declared.

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## Introduction

Alongside the official issues of *Military Physician*, during the years 1964 – 1989 a classified edition was also published. It was created at the request of the Editorial

Committee, supported by the Chief of the Healthcare Department of the Polish Army, Col. Dr. Czesław Pótorak MD, in order to “add military content to the journal”. The rationale behind the classified edition was that “military forces exist to protect sovereignty of the country during



**Figure 1.** Cover page of "Lekarz Wojskowy" marked "Secret/Non-Classified" from the years 1965-1973. Col. Stanisław Bober, MD, PhD (1911-1970) – "Lekarz Wojskowy" Editorial Committee Chair of 1965-1970.

**Rycina 1.** Okładka „Lekarza Wojskowego” z klauzulą „Tajne/Jawne” z lat 1965-1973. ppk prof. dr med. Stanisław Bober (1911-1970) - przewodniczący Komitetu Redakcyjnego „Lekarza Wojskowego” 1965-1970.



**Figure 2.** Cover page of "Lekarz Wojskowy" marked "Secret/Non-Classified" from the years 1974-1989. Editorial Committee and Consulting Board of the "Lekarz Wojskowy" 1970-1990: Col. Prof. Sylwester Czaplicki - Editorial Committee Chair, Lt. Col. Jerzy Łangowoj, MD, PhD - Editor, and Krystyna Walczak (Szuman) - Secretary.

**Rycina 2.** Okładka „Lekarza Wojskowego” z klauzulą „Tajne/Jawne” z lat 1974-1989. Komitet Redakcyjny i Rada Konsultantów „Lekarza Wojskowego” 1970-1990; ppk prof. Sylwester Czaplicki - przewodniczący Komitetu Redakcyjnego, ppk dr med. Jerzy Łangowoj - redaktor, i Krystyna Walczak (Szuman) - sekretarz.

war and (...) the army's operations during the time of peace consist primarily in preparing defences, training soldiers for the future tasks they may be required to perform." This goal was to be achieved by "publication of articles with classified content in the journal" with relation to the mentioned tasks [1, 2].

According to the editorial plan, secret issues of *Military Physician* were in B5 format with a volume of 320,000 characters, to be published twice a year, in June and December. In practice, the frequency depended on the number of articles submitted, and the needs at a given moment. In the years 1964-1989, 40 issues of the classified version of *Military Physician* were published. Their publisher, as in the case of the main edition, was the Healthcare Department of the Polish Army. The journal was printed with a circulation of 1050 copies at the Printing House of the General Staff of the Polish Army in Warsaw, sent to the classified publications library at the Military Medical Academy in Łódź, and distributed according to a distribution list, to institutes, hospitals, and military units [3].

Selection, form and content of the articles, both in the official and the classified version, were determined by the Editorial Committee, whose head in the years 1964-1970 was Col. Prof. Stanisław Bober MD, PhD (Fig. 1) [4].

After his sudden death and changes to the form of the editorial team, Col Prof. Sylwester Czaplicki MD, PhD became the Head of the Editorial Board of *Military Physician*, and held this position for 20 years. As he stated: "(...) every article published in *Military Physician* was peer reviewed. The editor, Jerzy Łangowoj, read it first, and sent it to a suitable reviewer, according to the content. If a specialist could not be found in the Editorial Board, the article was sent for assessment to members of the Consultation Council, which comprised main military experts. After the review, and prior to publication, I read the articles. Following editorial adjustments, introduction of abbreviations, revision of nomenclature and linguistic corrections, the article was sent back to the first author for approval of the work in the modified form. I asked all the authors to make corrections on a pre-print copy. However, my request was not always fulfilled. Some authors were very dedicated, others left everything to the editor, Ms Krystyna Szuman. She had no previous editorial experience when she started the work, but demonstrated great enthusiasm and engagement in the job. Soon she learned everything about running editorial office, which was a source of great satisfaction for me. We could always count on her, as she never missed any errors. The Consultation Council regularly read all the issues, and contributed to the editorial portfolio by providing inspiration for subjects, and offering their own texts" (Fig. 2) [5].



**Figure 3.** Cover page of "Lekarz Wojskowy" No.1/1996 marked "Confidential/Non-Classified". Col. Edward Stanowski, MD, PhD, Lekarz Wojskowy Editorial Committee Chair in the years of 1990-1998. Editorial Committee and Consulting Board.

**Rycina 3.** Okładka „Lekarza Wojskowego” 1996 nr 1 z klauzulą „Poufne/ Jawne”. plk prof. dr med. Edward Stanowski, przewodniczący Komitetu Redakcyjnego „Lekarza Wojskowego” 1990-1998. Komitet Redakcyjny i Rada Konsultantów.

After the systemic transformation in 1989, the classified version of *Military Physician* was discontinued. As an exception, in 1996 one of the published issues was classified; it contained the article "Doctrines of medical assistance in the army in case of threat to the national safety". The Head of the Editorial Board at that time was Col. Prof. Edward Stanowski MD, PhD (Fig. 3) [7].

After an amendment of the Act on protection of classified information of 22 January 1999, the classified issues of *Military Physician* were declared as "Non-classified", and "report was drawn from its destruction" [8]. Only an incomplete (without no. 1964/1), 39-issue collection of *Military Physician* – classified / non-classified remained at the Library of the Brig. Gen. Dr. Stefan Hubicki MD Military Centre for Medical Education in Łódź (Fig. 4) [9].

### Aim of the study

- To determine the content structure of articles published in the classified edition of *Military Physician*.
- To select representative examples of the journal from each topic area.
- To assess the archive value of the preserved collection of the classified *Military Physician* issues



**Figure 4.** Collection of "Lekarz Wojskowy" - Secret/Non-Classified of 1965-1989 (from collection of books: Stefan Hubicki WCKMed Library in Łódź)

**Rycina 4.** Kolekcja czasopisma „Lekarza Wojskowego” - tajny/jawny 1965-1989 (z księgozbioru Biblioteki WCKMed im. gen. bryg. dr med. Stefana Hubickiego w Łodzi)

### Material and methods

Based on the analysis of the titles of 504 articles published in the classified issues of *Military Physician*, they were classified into 9 areas of military medicine: (1) organisation of the Military Health System (OMHS), (2) hygiene and epidemiology, (3) radiobiology and toxicology, (4) field surgery, (5) field internal medicine, (6) maritime and tropical medicine, (7) aviation medicine, (8) social medicine and (9) medical supply [10]. Next, the distribution of the number of articles in individual topic areas was analysed in three decades: 1965-1969, 1970-1979 and 1980-1989. Based on the scientific reputation of authors, representative examples of articles from each topic area were selected.

### Results

Figure 5 presents the content structure of the articles published in the classified issues of *Military Physician*. It demonstrates that the greatest number of works discussed OMHS (27.5%), hygiene and epidemiology (19.2%), field surgery and internal medicine (17.9%), and social medicine (15.5%).

**Table 1. Content structure of secret "Lekarz Wojskowy" issues in 1965-1989 (percentage)****Tabela 1. Struktura tematyczna tajnego „Lekarza Wojskowego” w dekadach lat 1965-1989 (w %)**

Area of military medicine	Years 1965-1969	Years 1970-1979	Years 1980-1989
1. Organisation of the Military Health System	32.2	17.2	39.3
2. Hygiene and epidemiology	23.6	27.7	5.2
3. Radiobiology and toxicology	7.5	5.9	1.7
4. Field surgery	0	21.8	12.7
5. Field internal medicine	0	1.7	6.9
6. Maritime and tropical medicine	3.2	1.7	2.9
7. Aviation medicine	18.3	6.7	1.7
8. Social medicine	9.7	10.1	26.0
9. Medical supply	5.4	7.1	3.5

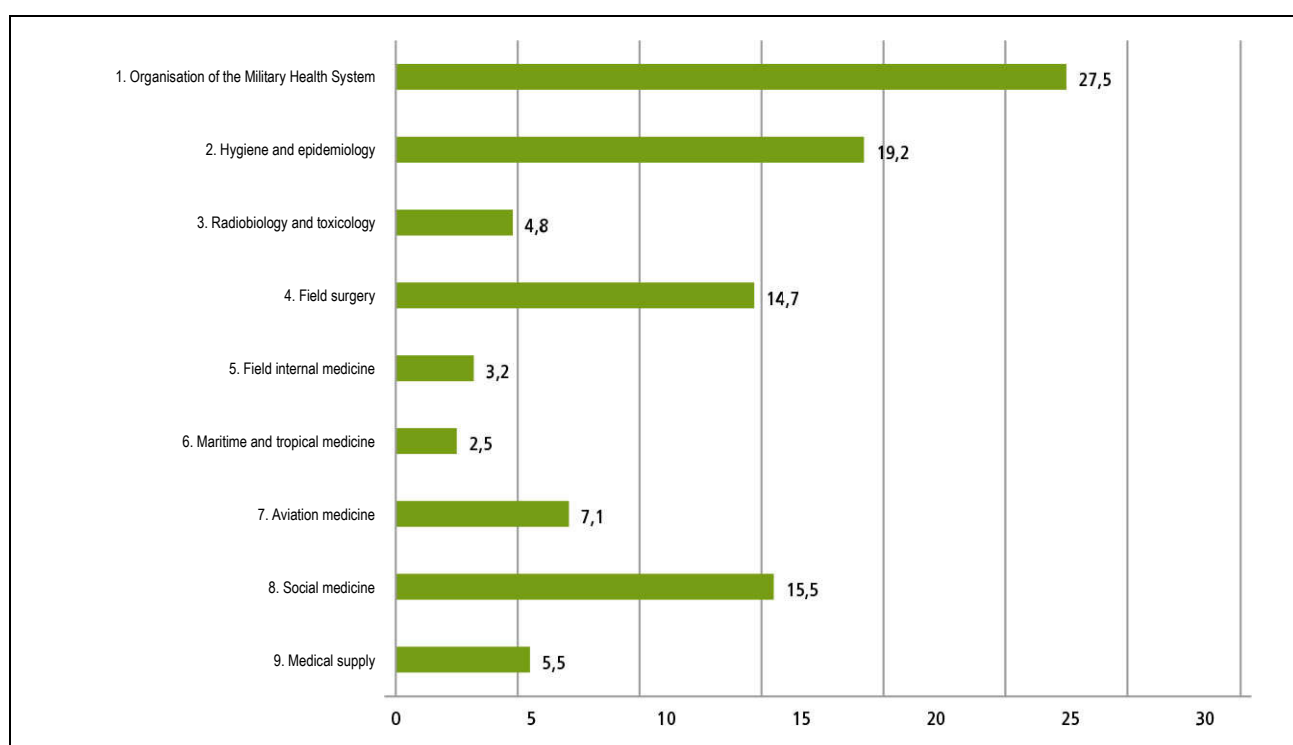
**Figure 5. Content structure of "Lekarz Wojskowy" secret issues, 1965-1989 (%)****Rycina 5. Struktura tematyczna tajnych zeszytów „Lekarza Wojskowego” 1965-1989 (w %)**

Table 1 presents the distribution of articles according to topic area in individual decades. Studies in OMHS dominated in the 1960s. (32.2%) and 1980s (39.3%). In the 1970s, most articles discussed hygiene and epidemiology (27.7%); in the next decade this topic was rarely explored (5.2%). In the 1970s, articles in field surgery (21.8%) and field internal medicine (1.7%) occurred for the first time. In the 1980s, they were the second most often published studies (19.6%). In the analysed periods, the percentage of articles on social medicine was increasing (from 9.7% to 26.0%). The

opposite trend was observed in aviation medicine (a reduction from 18.3% to 1.7%).

Articles on OMHS primarily discussed the methodology of organising field exercises [11, 12], medical assistance for the military and tactical units during operations [13], calculation of sanitary losses and the needs of health service [14], and principles of segregation, medical evacuation, and treatment according to the guidelines [15]. The authors of these articles were professors of the Military Medical Academy, and based on their content, they were intended primarily

for the students of this school. These publications addressed the severe shortage of textbooks for military-medical subjects.

The articles on hygiene and epidemiology discussed mainly sanitary and hygienic issues [16], prevention of infectious diseases [17, 18], tuberculosis [19] and sexually transmitted diseases [20]. The significant share of these topics in the classified *Military Physician* issues in the 1960s and 1970s illustrates its epidemiological importance at that time.

The articles on radiobiology and toxicology analysed radiological protection during operations in radiologically contaminated areas [21], assessment of the destructive effects of ionising radiation, diagnosis and management in post-radiation burns [22, 23], and elimination of the effects of advanced chemical weapons [24]. A relatively low, and decreasing percentage of these articles in the classified edition of *Military Physician* suggests that researchers showed reduced interest in protection against weapons of mass destruction.

The articles on field surgery presented e.g. surgical management in combat injuries [25 - 27], treatment of traumatic shock [28], and resuscitation and anaesthesiological management at the combat field [29]. The spectacular occurrence of these articles in the classified edition of *Military Physician* in the 1970s was associated with the studies on shotgun wounds and traumatic and haemorrhagic shock, conducted by Col. Prof. Tadeusz Orłowski, Prof. Donat Tylman, and Prof. Stanisław Rudnicki. A cycle of studies on combat field surgery by Col. Assoc. Prof. Waclaw Szostek MD, PhD, based on the experience from the war in Vietnam, also contributed to the popularity of this topic [30].

Articles on field internal medicine were first published in the classified edition of *Military Physician* in the 1970s, after the studies conducted by Gen. Prof. Dymitr Aleksandrow and Col. Prof. Sylwester Czaplicki on the risk of coronary disease [31] and myocardial infarction [32] in the military staff. The research was focused on conservative therapy and evacuation in the context of mass sanitary losses [33], treatment of acute renal failure [35, 36], and acute life-threatening conditions in gastroenterology [37]. The percentage of these articles increased significantly in the 1980s.

The studies in maritime and tropical medicine explored e.g. accidents at ships [38], risks associated with noise [39] and insufficient light [40], injuries and infections in divers [41], as well as parasitic infestations in cadets and ship crews [42]. The articles were derived from the Chair of Maritime Medicine, Military Medical Academy in Łódź, created in 1961 in Gdańsk by Cmdr. Prof. Augustyn Dolatowski, later transformed into the Institute of Maritime and Tropical Medicine.

The articles on aviation medicine discussed, for example, medical assistance for aircraft, consequences of ejection [38], medical expert opinions regarding aircraft crashes for court proceedings [39], and the effect of work within the scope of laser radiation on the eyesight [40]. The relatively large proportion of studies in this area in the classified *Military Physician* in the 1960s, mainly due to the scientific research of Col. Prof. Stanisław Haduch, decreased over the subsequent decades, to practically disappear in the 1980s.

Articles on social medicine reflected the interest of the army in psychosocial problems. This interest started in the 1960s, and it included psychoprophylaxis [46], therapy of alcoholism [47], service of mentally disabled soldiers [48], self-injury [49], and suicide [50], as well as treatment and evacuation in acute mental disorders in combat situations [51]. In the 1980s, these topics ranked second regarding their frequency in the classified edition of *Military Physician*.

The articles on medical supply discussed primarily the collection and rotation of stored materials [52], supplying the army with blood and blood related products [53, 54], and fluids used for the prevention and treatment of acute renal failure [55]. The percentage of articles in this area in the classified edition of *Military Physician* in the analysed period remained similar.

## Discussion

Apart from monographies, classified edition of *Military Physician* presented multispeciality articles which demonstrated uniform medical management procedures in the case of threats to the life and health of soldiers [56-58]. The aim of these texts was similar to that of NATO STO HFM panel reports, i.e. optimisation of healthcare and well-being of soldiers with consideration of the environment [59]. These articles prove that military healthcare, regardless of numerous limitations, strived to ensure optimal medical assistance to soldiers in times of peace and war.

## Conclusions

The classified and non-classified issues of *Military Physician* from the years 1965-1989 provide valuable material for studies on the history of Polish military medicine.

The unique collection of the classified / non-classified *Military Physician* stored in the Library of the Military Centre for Medical Education in Łódź should be digitalised to make it available to a wider scientific community, and to protect it from destruction.

Digitalisation of all the issues of *Military Physician* published only in print would be a worthy celebration of

the 100<sup>th</sup> anniversary of this journal, whose merits for the Polish Army and Polish medicine are unquestionable.

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# “Lekarz Wojskowy” - centenary of serving our country

„Lekarz Wojskowy” - stulecie służby Ojczyźnie

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**Abstract.** “Lekarz Wojskowy” has been published since 3 January 1920. Its founders, the Military Sanitary Council, intended the journal to serve military physicians. It became an integral part of the military health service, accompanying its readers in their daily work, during times of war and peace, in building a new Poland and modern armed forces. The outbreak of the Second World War interrupted the development of the magazine. However, as early as 1941, a group of Polish medical officers in exile in Edinburgh took the initiative to publish “Lekarz Wojskowy” referring to its pre-war form. The edition of the magazine was resumed in Lublin in the first days of 1945, even before the liberation of Warsaw. For 100 years “Lekarz Wojskowy” has served its original purpose, first by propagating the latest scientific achievements among military medical practitioners, shaping attitudes and educating military physicians, who would be honoured to work in the army.

**Keywords:** periodicals - history, 20th century history of medicine

**Streszczenie.** „Lekarz Wojskowy” ukazuje się od 3 stycznia 1920 r. W założeniu jego twórców. Wojskowej Rady Sanitarnej, pismo miało służyć lekarzom wojskowym. Czasopismo wrosło w struktury wojskowej służby zdrowia, towarzyszyło czytelnikom w codziennej pracy w czasie działań wojennych i w czasach pokoju, także w budowaniu nowej Polski i nowoczesnych sił zbrojnych. Wybuch II wojny światowej przerwał rozwój czasopisma, ale już w 1941 r. na obczyźnie, w Edynburgu, grupa polskich oficerów lekarzy podjęła inicjatywę wydawania „Lekarza Wojskowego”, nawiązując do edycji przedwojennej. W pierwszych dniach roku 1945, jeszcze przed wyzwoleniem Warszawy, wznowiono edycję czasopisma, wydając je w Lublinie. Przez 100 lat „Lekarz Wojskowy” pełnił służbę, stawiając sobie za cel przede wszystkim upowszechnianie najnowszych zdobyczy nauki oraz kształtowanie postaw i wykształcenie lekarza wojskowego, dla którego praca w wojsku będzie zaszczytem.

**Słowa kluczowe:** czasopisma - historia, historia medycyny XX wieku

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## The interwar period

3 January 2020 marked the hundredth anniversary of the first publication of *Military Physician*, a journal focusing on military medicine. The journal was founded by the Military Sanitary Council (MSC), an organ of the Ministry of Military Affairs. President of the Military Sanitary Council, Col. Prof. Zdzisław Dmochowski, outlined the tasks for the newly founded journal in its first edition. The most important ones included informing military physicians about the recent scientific findings and providing current information about the sanitary organisation in the army.

He also declared the willingness to include readers in the process of creating the journal by publication of articles, ensuring freedom of expression. These goals of *Military Physician* were implemented in the entire period of its publication (Fig. 1 – 2).

The journal was edited by a committee comprising MSC members. The first editor was Lt. Col. Dr. Jan Koelichen (Fig. 3), and in the years 1922-1927 he was replaced by Col. Dr. Władysław Osmolski (Fig. 4). Other editors-in-chief included Gustaw Szulc (Fig. 5), and from 1934 – Lt. Col. Dr. Stanisław Konopka (Fig. 6).



**Figure 1.** WRS headquarters, Ujazdowski Castle, 1944. Author unknown (source: © Archive Deutsches Dokumentationszentrum für Kunstgeschichte - Bildarchiv photo Marburg, Nr. fm931407)

**Rycina 1.** Siedziba WRS, Zamek Ujazdowski, z lotu ptaka, 1944. Autor nieznany (źródło: © Archiwum Deutsches Dokumentationszentrum für Kunstgeschichte - Bildarchiv Foto Marburg, Nr. fm931407)

Individual issues of the 1920 annual and several subsequent annuals were divided into parts. The first one, of approximately 80,000 characters, contained "articles of strictly scientific nature, followed by military-medical content, articles about lives of military physicians etc." [1], whereas the second part included abstracts of scientific publications and reports from scientific conferences. With time, the volume of the journal and the number of articles published gradually increased.

From the beginning, *Military Physician* presented content important for the development and safety of the country. In the first years after Poland regained independence, the most pressing problems included addressing the epidemiology of severe infectious diseases, spreading especially in the eastern part of the country. Epidemic typhus, smallpox, acute gastrointestinal diseases, including the most dangerous ones, such as typhoid fever, cholera and dysentery, contributed to high mortality among soldiers and civilians. In that period, numerous cases of tuberculosis were also observed, especially in children and adolescents. Venereal diseases, together with other infectious diseases, posed another significant problem. In the years 1920 – 1923, *Military Physician* presented numerous articles analysing the above problems, and materials promoting behaviours that could contribute to limiting the epidemics. They were written by recognised epidemiologists, bacteriologists, heads and staff of facilities specialising in laboratory diagnostics.

Creating modern healthcare was one of the issues important for restoration of the country and for its future. The editorial board offered the pages of the journal to authors, who joined the efforts to create future structures, and *Military Physician* became a forum for the nation-wide discussion on the form and role of sanitary service in the Polish Army, and its place in the new country. Publication of the experiences gained by physicians during the World War I and the Polish-Russian war of 1919–1920 significantly contributed to the development of regulations for the army [2]. Education of the personnel for the military sanitary service was particularly important to all the editorial boards of *Military Physician*. When the Military Sanitary School (MSS) was created on 31/10/1922, the fact was naturally mentioned in the journal. Since then, information about the school featured regularly in the journal, and the group of authors included those associated with the new educational centre.

Participation in the organisation of military sanitary air service, pioneered by Gen. Dr. Felicjan Sławoj Składkowski, provides evidence for the journal's engagement in the current affairs of the country and in promotion of modern ideas. In October 1922, when the Sanitary Department started organising the Committee for Sanitary Air Service in Poland, whose task was to collect financial resources for the cause, *Military Physician* joined the efforts to popularise the idea, offering its pages to authors who promoted this topic, and regularly publishing the information about the already collected funds.

nr 1. Warszawa, 3 stycznia 1919 r. 1920 № 1.



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!!! 10 złotych i srebrnych medali !!!  
Poleca: Gazy i waty opatrunk. Opatrunki wyjął.  
Opatrunki dla wojska. Bandaże. Plastery smarowane  
zwyczajne i kauczukowe, nie usięgające wyrobem za-  
granicznym. Plaster kauczukowy na szpilkach. Pla-  
sterek angielski przewożący wyroby zagraniczne  
w różnem opakowaniu. Plaster „Thapsia”. Plaster  
Watrzański na odciski. Plaster rypitrowy znieczulony.  
Kataplazmy antysept. Synapizma. Papier „Vitisl”.  
„Fayard et Biern”, Mouches de Milan.  
Dustawy dla wojska, szpitali, dr. 2e1., kooper. II p.

Figure 2. Front page of "Lekarz Wojskowy" 1919; 1 (1)

Rycina 2. Strona tytułowa „Lekarza Wojskowego” 1919; 1 (1)



**Figure 3.** Jan Koelichen - Editor-in-Chief 1920-1922. *Mil. Phys.*, 1929; 14 (1-4): 3

**Rycina 3.** Jan Koelichen - redaktor w latach 1920-1922. *Lek Wojsk.*, 1929; 14(1-4): 3



**Figure 4.** Władysław Osmolski - Editor-in-Chief 1922-1927 ([www.ipsb.nina.gov.pl/a/biografia/wladyslaw-leon-osmolski](http://www.ipsb.nina.gov.pl/a/biografia/wladyslaw-leon-osmolski) [accessed 15.10.2019])

**Rycina 4.** Władysław Osmolski - redaktor w latach 1922-1927 ([www.ipsb.nina.gov.pl/a/biografia/wladyslaw-leon-osmolski](http://www.ipsb.nina.gov.pl/a/biografia/wladyslaw-leon-osmolski) [dostęp 15.10.2019 r.]

Restoration of the country and the work for peace affected the topics published in the last issues from 1923, in which increasing emphasis was placed on internal medicine, and case reports not related with the military service. In subsequent years, the journal's content was dominated by articles discussing broadly understood internal medicine, as well as other medical areas, including neurology and aviation medicine. Military medicine was giving way to general medicine. In 1924, in summing up four years of its presence, the editorial board of *Military Physician* emphasised the aspect important for the development of healthcare, namely increasing "co-operation between the civilian and military sanitary services [...] necessary not only for the purposes of war, unfortunately possible and even predicted, but also for the development of medicine and to establish its beneficial influence on the strength of the Polish nation in creating peace" [3].

A lot of space in *Military Physician* was devoted to educating a new generation of future physicians – officers

of the Polish Army, e.g. by publishing articles presenting great achievements by Poles, the national liberation movement, and the history of Polish Legions. This content was intended for students, whose professors also paid attention to health and physical fitness, as the goal was to form "a good physician, disciplined internally and externally, familiar with the problems of the army and war, a soldier with ideals, and a leader" [4].

The programme goals of the journal were affected by the creation of the Centre of Sanitary Education (CSE), incorporating the Medical School for Cadets, on the 1 April 1930. Former editor-in-chief, Gustaw Szulc, emphasised that both the centre, and the journal had the same obligation to participate in the education of "the future corps of military physicians, to unite it with common ideas and doctrine, so that it could become an effective and ideal tool for the defence of the nation during war. (...) The same people who, by writing for *Military Physician*, put their minds and hearts into creating the foundations of ideology for Polish army doctors were called to work at



**Figure 5.** Gustaw Szulc - Editor-in-Chief 1927-1934 (from WIM archives)  
**Rycina 5.** Gustaw Szulc - redaktor w latach 1927-1934 (z zasobów WIM)



**Figure 6.** Stanisław Konopka-Editor-in-Chief 1934-1939  
 (www.cybra.lodz.pl/Content/5905/522-550.pdf [accessed 12.12.2019])  
**Rycina 6.** Stanisław Konopka - redaktor w latach 1934-1939  
 (www.cybra.lodz.pl/Content/5905/522-550.pdf [dostęp 12.12.2019 r.]

the school, to form the minds and hearts of the young generation of military physicians” [4].

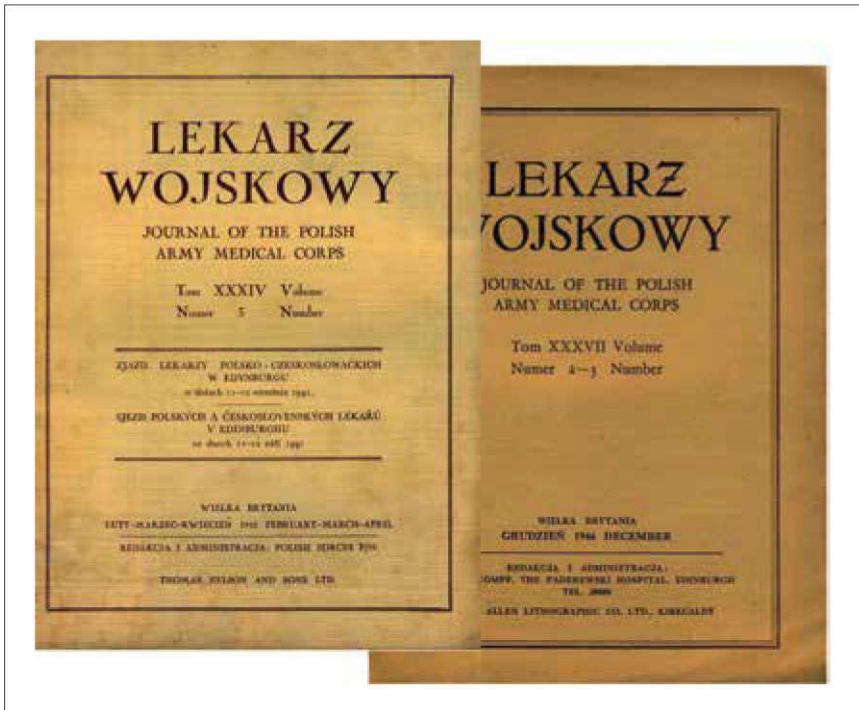
The last issue published before September 1939 was no. 2 vol. 34, dated 1 August.

### War period – Edinburgh

In July 1941, in Edinburgh, a journal titled *Military Physician* was published. The idea of reinstating the journal came from Polish physicians in Great Britain, and the newly founded Polish Military Medical society in the United Kingdom in Edinburgh took charge of the endeavour (Fig. 7). Col. Dr. Zygmunt Żołędziewski became the Editor-in-Chief. From issue 2-3 in 1945 until the last issue in 1946 published in Great Britain, Col. Dr. Henryk Kompf MD, PhD was the Editor-in-Chief (Fig. 8). The content of the journal was focused on healthcare problems associated with the war. The dominant issue included sanitary tactics and effectiveness of the Polish

medical corps on the battlefield. *Military Physician* was not only a source of medical knowledge, but also published numerous communications regarding Polish affairs, to maintain the Polish spirit and belief in victory [5, 6].

One of the particularly important texts was the speech of the dean of Polish Medical Faculty in Edinburgh, given during the inauguration of the academic year 1944-1945, and published in 1945. Professor Antoni Jurasz started the inauguration speech with the following words: “At the beginning of my report I would like to fulfil the need of all of us, gathered here, and express our love for our country. (...) We humbly bow before those who died from the bullets of the enemy while fighting for Poland, who were killed in concentration camps, or died in poverty or in exile.” There were also words of hope: “Preparing for the future, we have collected a significant amount of textbooks, scientific books, medical journals, clinical apparatus and scientific equipment. We believe that we



**Figure 7.** Front pages of “Lekarz Wojskowy” 1941 and 1946 - Edinburgh

**Rycina 7.** Okładki „Lekarza Wojskowego” z lat 1941 i 1946 - Edynburg



**Figure 8.** Henryk Kompf - Editor-in-Chief 1945-1946  
([www.pl.wikipedia.org/wiki/Henryk\\_Kompf](http://www.pl.wikipedia.org/wiki/Henryk_Kompf) [accessed 15.10.2019])

**Rycina 8.** Henryk Kompf-redaktor w latach 1945-1946  
([www.pl.wikipedia.org/wiki/Henryk\\_Kompf](http://www.pl.wikipedia.org/wiki/Henryk_Kompf) [dostęp 15.10.2019 r.]

can return with all this and start restoring our medical faculties in Poland” [7].

### Post-war period (1945-2019)

Before military operations had even ceased, already by January 1945, *Military Physician* was being published in the partially freed regions of Poland (Fig. 9). The secret order regarding this matter was issued on 29 January 1945.

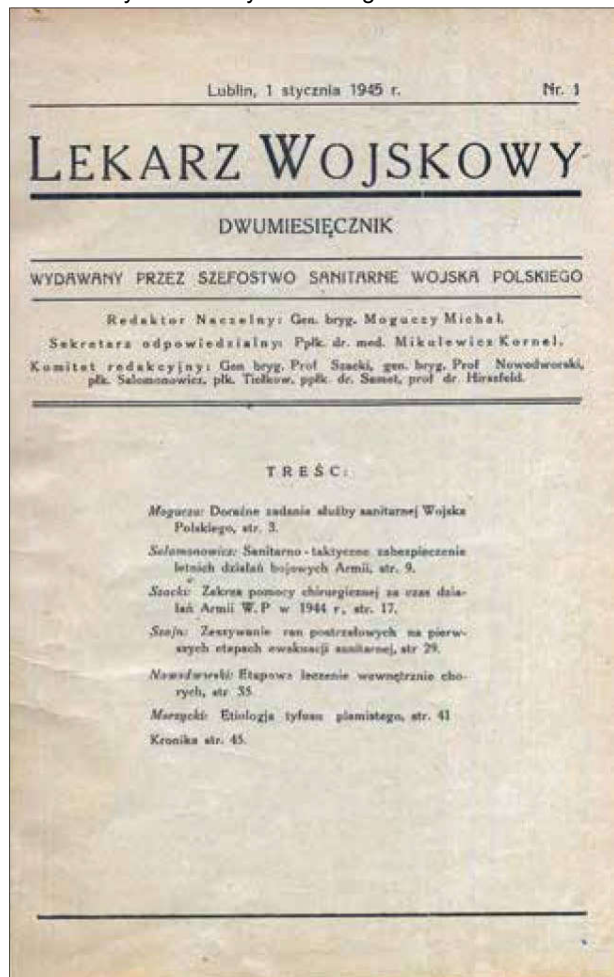
“Order No. 12

In order to centralise the medical potential around the healthcare authorities, and to improve the management of practical aspects of the field sanitary service, as well as to create uniform principles for the work of physicians, I order:

1. To establish a military medical journal by the Sanitary Chief in the Polish Army.
2. To assign the Editorial Committee as follows:
  - Editor in charge: Brig. Gen. Cand. Med. Moguczy,
  - Secretary in charge: Lt. Col. Dr. Mikulewicz.
  - Members of the editorial Committee: Brig. Gen. Prof. A. Szacki, Brig. Gen. Prof. Nowodworski, Prof. Hirszfeld, Prof. Węgierko, Col. Salomonowicz\*<sup>1</sup>, Col. Cand. Med. Tielkow, Lt. Col. Samet.

<sup>1</sup> Col. Adam Salamonowicz, the name was probably misspelled [author’s comment], see the article *Military Physician* 1945; 1: 9.

3. To organise publication of the journal on a bi-monthly basis by the Military Publishing Institute.



**Figure 9.** Front page of „Lekarz Wojskowy” 1945; (1)  
**Rycina 9.** Strona tytułowa „Lekarza Wojskowego” 1945; (1)



**Figure 10.** Bolesław Szarecki - Editor-in-Chief 1946-1951 (WIM archives)

**Rycina 10.** Bolesław Szarecki - redaktor w latach 1946-1951 (z zasobów WIM)

Signed by the Chief of the Healthcare in the Polish Army Brig. Gen. Moguczy. The order has been issued in 6 copies” [8].

The first issue, dated 1 January, was available in Lublin. The Sanitary Chief of the Polish Army was the publisher. The journal was to present not only clinical articles, but also plans of the military leadership, and popularise the achievement of the Polish and Soviet armies.

The editorial office was temporarily in the building of the Chair of Military Medicine at the Catholic University, where 4 issues in 1945 were published. After relocating to Warsaw, the journal’s office was moved to the Ministry of National Defence Hospital and Polyclinic in Koszykowa St. In 1946, Brig. Gen. Prof. Bolesław Szarecki became the editor-in-chief, and he held this position until 1958 (Fig. 10). In the 1950s, the journal’s office was at 24 Filtrowa St., and then in 1959 it returned to Koszykowa St. The military authorities responsible for military healthcare considered *Military Physician* to be an important medium that should significantly affect the development of military healthcare, as well as increase its authority and prestige. The journal was to determine the

level of military healthcare personnel in the professional, ethical, and political aspects.



**Figure 11.** Stanisław Bober - Editor-in-Chief 1959-1970 (from WIM archives)

**Rycina 11.** Stanisław Bober - przewodniczący komitetu redakcyjnego w latach 1959-1970 (z zasobów WIM)



**Rycina 12.** Sylwester Czaplicki - przewodniczący komitetu redakcyjnego w latach 1970-1990 (z zasobów WIM)

**Figure 12.** Sylwester Czaplicki - Editor-in-Chief 1970-1990 (from WIM archives)

Opening military healthcare for the treatment of civilians significantly affected the development of the journal: "We are organising healthcare worthy of the army of a democratic country. (...) in order to train experienced physicians and to maintain the high level of their competences, it is necessary to admit patients with all types of diseases to military healthcare institutions, which is impossible if only military personnel is admitted, as soldiers generally tend to be healthy (...)" [9]. This policy resulted in numerous articles on the conditions unrelated to military service, and becoming more open to the wide group of readers who were physicians working in civilian healthcare institutions.

The content of *Military Physician* in the 1940s focused primarily on the issues related to the Second World War and analyses of the experience gained during this conflict. The majority of articles discussed surgery, including field

surgery, as well as healthcare organisation and tactics, considering both the past, and the future of the military sanitary services. In 1947, Col. Leon Gecow wrote about the goals of the journal: "Our publications will reflect our scientific work. *Military Physician* will present the scientific life of the Polish sanitary services, and will find space both for original articles, scholarly discussions, and reports. Considering the deficits in the literature, it is necessary to familiarise physicians, at least by means of article abstracts, with the most noteworthy publications. Part of the Soviet specialist literature has been made available to military physicians, but the Western publications are not available in sufficient quantities. *Military Physician* will strive to present the most interesting articles, as far as possible" [10].



**Figure 13.** Edward Stanowski - Editor-in-Chief 1990-1997 (from WIM archives)

**Rycina 13.** Edward Stanowski - przewodniczący komitetu redakcyjnego w latach 1990-1997 (z zasobów WIM)



**Figure 14.** Marian Cholewa - Editor-in-Chief 1997-1999 (from WIM archives)

**Rycina 14.** Marian Cholewa - przewodniczący komitetu redakcyjnego w latach 1997-1999 (z zasobów WIM)

In subsequent years, the journal presented articles on military medicine along with texts addressed to doctors of various specialities, also working in civilian centres.

Popularisation of knowledge based on Western experiences was soon forbidden. In 1950, *Military Physician* published a note with references to "building

the foundations of socialism”, and using the achievements of the fraternal soviet nation as a model. The problem of the class war was emphasised. The achievements of Western science, including medicine, were criticised, and its adverse effect was discussed on the moral stance of physicians, the development of Polish pharmacology and private medical practice. “Complete dissociation from the idolatry of Western medicine”, and relying on the successes of the Soviet science was postulated [11].

A drift away from the direction set by the socialist government became evident already in 1954, and in the following years the journal focused on the popularisation of scientific content and raising of the scientific value of *Military Physician*. The creation of the Military Medical Academy in Łódź in 1958 significantly affected the journal's development. The Academy incorporated the Central Clinical Hospital of the Ministry of National Defence in Warsaw, located at 78 Koszykowa St., and re-named the 2nd Central Clinical Hospital of the Military Medical Academy. This change resulted in expanding the scope of the hospital's activities to include educational work for post-graduate and the specialist training of medical personnel. *Military Physician* was one of the means to reach this goal. The Head of the Editorial Committee was Col. Prof. Stanisław Bober (Fig. 11).

Another step to increase the level of articles published in *Military Physician*, and to establish its scientific character, was the Editorial Board's decision of 1959 to divide the content according to the UNESCO guidelines. After that, articles were classified into three groups: original articles, review articles and clinical articles (case studies). Stanisław Bober perceived the journal as a medium that “(...) should popularise the experience of military physicians in providing safe living conditions and training for soldiers (...) *Military Physician* should also inform about the recent achievements in medicine, and the established opinions regarding their practical use, primarily to satisfy the needs of military doctors who do not have an easy access to professional journals. This will contribute to increased level of healthcare in military units and facilities” [12].



**Figure 15.** Tadeusz Plusa - Editor-in-Chief 1999-2009 (from WIM archives)  
**Rycina 15.** Tadeusz Plusa - redaktor naczelny w latach 1999-2009 (z zasobów WIM)



**Figure 16.** Jerzy Kruszewski-Editor-in-Chief since 2009 (from WIM archives)  
**Rycina 16.** Jerzy Kruszewski - redaktor naczelny od roku 2009 (z zasobów WIM)

When Prof. Stanisław Bober passed away in 1970, Col. Prof. Sylwester Czaplicki became the Head of the Editorial Board (Fig. 12). Further changes were introduced in 1991, when Col. Prof. Edward Stanowski became the Editor-in Chief (Fig. 13), to be replaced in 1997 by Col. Prof. Marian Cholewa (Fig. 14.), who held this position until 1999. The journal did not change its character. Readers were informed about the most recent findings in medicine, as well as the plans and directions for development of the military healthcare, organisation and tactics in health services, issues associated with prevention, hygiene, epidemiology, adjudication, provision and medical technology.

The participation of Polish soldiers in military operations abroad, and their presence in Polish Military contingents (PMC) were also mentioned in *Military Physician*. Soldiers and civilian employees of the military healthcare willingly shared their experiences and observations with the readers. The journal also published results of scientific studies conducted in the areas of military operations.

The 1990s proved to be very difficult for specialist journals, including *Military Physician*. Professor Jerzy Kruszewski, summing up 90 years of the journal, wrote: "(...) the decision makers in the military healthcare questioned the purpose of publishing the journal. Their decisions threatened the continuity of a beautiful tradition, and the possibility to publish the journal (...). New patrons had to be found" [13].

In 1999, the Section of Military Physicians at the Polish Medical Society took on the role of such patron, and Central Clinical Hospital of the Military Medical Academy (presently Military Institute of Medicine) became the editor of the journal. Col. Prof. Tadeusz Plusa became the editor-in-chief (Fig. 15). In 2005, *Military Physician* became the official scientific journal of the Military Institute of Medicine. Since 2009, the head of the Programme Council and Review Committee comprising 38 members has been Maj. Gen. Prof. Grzegorz Gielera, and the Editor-in-Chief Prof. Jerzy Kruszewski (Fig. 16). In 2015, the Programme Council also included representatives of foreign scientific centres, e.g. from

Italy, Germany and the United States. The journal is available in the Internet in Polish and English language versions.

## Conclusions

“(…) Any military physician or pharmacist who found our journal to be a source of intellectual nourishment, owing to which they never lived in ignorance, left behind” [14]. This sentence comes from an editorial note in *Military Physician* from 1929, and it is a tenet passed on from generation to generation. The survival of the journal could not be possible without its editors, numerous authors, and faithful readers. Many recognised specialist in medicine and related sciences accepted the invitation to publish in the journal. In the interwar period the following doctors shared their knowledge and experience: Edward Flatau, Samuel Goldflam, Eufemiusz Herman, Jan Nelken, Leon Kryński, Romuald Węglowski, Zygmunt Radliński, Bronisław Sawicki, Jerzy Rutkowski, Wiktor Arkin, Antoni W. Gluziński, Alfred Sokołowski, Odo (Otto) Bujwid, Wiktor Grzywo-Dąbrowski, Rudolf Weigl, lecturers of the Centre for Sanitary Education and medical universities. The war period edition was co-created by: Leon Owczarewicz, Bolesław Szarecki, Anton Jurasz, Antoni Fiumel, lecturers of the Medical Faculty in Edinburgh, including Anastazy Laundau, Włodzimierz Missiuro, Bruno Nowakowski and Tadeusz Sokołowski. In the post-war period, the journal also co-operated with outstanding scientists, heads and employees of research facilities, medical academies, civilian and military hospitals.

On its pages we find the names of people of established renown, next to authors of a single paper, written in a provincial garrison, or in a small hospital, as well as those whose names after several years became recognisable in the scientific world. The 100-year-long history of the journal is due to the efforts of many people, primarily editors, editorial boards and publishers. Reviewers and the Programme Council also significantly contributed to the quality of articles published in *Military Physician*. Careful selection of topics, an emphasis on high qualifications of the authors, and addressing the readers' needs by offering an opportunity to improve and

permanently extend their knowledge, all this helped to fulfil the declaration of the head of the Military Sanitary Council, Z. Dmochowski, from the first issue of *Military Physician*: “We wish to present our doctors with all the advances in medical science, we wish to provide the opportunity to speak, we wish to connect all military physicians within one, live entity, we wish to raise their interest in the level of sanitary organisation of the Polish army, we wish to develop the sense of belonging to the institution and love for it, we wish to reach a point where military physicians consider it an honour to work in our army” [15, 16].

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# A history of medical self-government in the Second Republic of Poland

## Historia samorządu lekarskiego w II Rzeczypospolitej

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**Abstract.** Establishing the medical, and then medical and dental, chambers in the Second Republic of Poland was acknowledged as a great achievement of the medical circle. Despite critical opinions, this organization supported physicians in their education, professional integration and during physician-patient and physician-physician conflicts. The activity of the medical and medical and dental chambers was discontinued on 26 January 1940.

**Keywords:** Dentists, physicians, self-government, Second Republic of Poland

**Streszczenie.** Powstanie izb lekarskich, a następnie lekarsko-dentystycznych w II Rzeczypospolitej uznawane było za wielkie osiągnięcie środowiska lekarskiego. Mimo pojawiających się krytycznych opinii samorząd wspierał lekarzy w ich kształceniu, integracji zawodowej, ale również konfliktach na linii lekarz—pacjent oraz pomiędzy samymi lekarzami. Działalność izb lekarskich i lekarsko-dentystycznych zakończyła się 26 stycznia 1940 r.

**Słowa kluczowe:** samorząd, lekarze, dentyści, II Rzeczypospolita

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Next year marks the 100<sup>th</sup> anniversary of Polish medical self-government. On 2 December 1921, the Sejm passed the act on the medical practice in Poland, and the on the system and activity of medical chambers. The celebrations could be extended to 2022, as the Act on medical chambers became effective on 1 January 1922.

The idea of creating medical self-government met with different opinions/evaluations, from very positive, even enthusiastic ones, to more cautious, or critical views. Some perceived self-government as a worthy representative of the professional interests of physicians, as an entity that would not only ensure the appreciation for the profession and quality of services, or solve conflicts regarding professional rights, but also would join in the fight against medical wrongdoing, and would initiate and encourage hygienic practices to improve the health of Polish citizens. Others, on the contrary, opposed the chambers as institutions that limit the civic freedom of doctors. The opponents were afraid of disciplinary courts, rigorous execution of membership fees, and limits to the liberty of a free profession. Fears were expressed that the chambers would serve the authorities more than physicians and patients. Their activity was expected to have a more repressive than protective nature.

However, the majority of doctors wanted to establish medical self-government, whose future chambers were to gather all the physicians in Poland, have the attributes of power, and an executive body [1]. Two projects for acts regarding medical ordinance and the creation and functioning of medical chambers were submitted in parliament on 1 May 1919, and works on the final acts began [2]. Amended versions were submitted to the Sejm on 27 and 30 November 1920. They were discussed until 7 October 1921, when the Sejm Public Health Committee finished the work. On 2 December 1921, the Sejm passed the Act on Medical Practice and the Act on Medical Chambers [3]. The Act on medical chambers became effective on 1 January 1922. The competences of the medical self-government were partially determined by the Act on medical practice. Article 24 stated that until medical chambers were created, all problems within the scope of their responsibility would be settled by relevant Voivodeship Offices. The act on medical chambers also stipulated that within 3 years from the publication of the act, the Minister of Public Health would assign the date of establishing the chambers [4]. The territorial structure of the medical self-government was based on the administrative division. The jurisdiction of each chamber

was to cover the area of a voivodeship (Provincial Medical Chambers), with offices in respective capital cities. The Minister of Public Health could, in agreement with the Chief Medical Chamber, call additional regional chambers in various parts of the country, or to combine several provincial chambers into one, or even to join a part of a chamber's territory to another chamber.

On 15 March 1922, the Minister of Public Health issued a regulation regarding creation of medical chambers, and the following chambers were formed:

- Warszawsko-Białostocka, with offices in Warsaw, including the area of the capital city of Warsaw with the Warszawskie and Białostockie voivodeships,
- Łódzka, with offices in Łódź, including the city of Łódź and the Łódzkie voivodeship,
- Krakowska, with offices in Krakow, including the city of Krakow and Krakowskie and Kieleckie voivodeships,
- Poznańsko-Pomorska, with offices in Poznań, including the city of Poznań and Poznańskie and Pomorskie voivodeships,
- Lwowska, with offices in Lviv, including the city of Lviv and Łwowskie, Tarnopolskie and Stanisławowskie voivodeships, and
- Lubelska, with offices in Lublin, including the city of Lublin and Lubelskie, Wołyńskie and Poleskie voivodeships [5].

The Wileńsko-Nowogrodzka Chamber was created in 1925, and then the Śląska Medical chamber with offices in Katowice in 1934. Before the start of the Second World War, on 15/03/1939, the Minister of Social Affairs issued a regulation removing the Poznańsko-Pomorska Medical Chamber, and two new chambers were established: Poznańska, with offices in Poznań, and Pomorska, with offices in Toruń. Poznańsko-Pomorska Medical Chamber was the first one to start operating (February 1922), followed by Lwowska (January 1923), Lubelska and Łódzka (February 1923), Krakowska (May 1923), and Warszawsko-Białostocka (February 1924). The Wileńsko-Nowogrodzka Medical Chamber appointed their government in November 1926, and Śląska Medical Chamber in May 1935 [6].

The first elections to medical chambers took place nationally on 10 December 1922, and a month later, on 14 January 1923, by-elections were organised. In order to conduct the elections, a government election commissioner was appointed for the area of each chamber as a chairman of the election committee. The committee comprised seven other members, and seven deputies. The vote was secret, and was performed in two ways. The first one involved submitting a closed voting card in the polling station in person, whereas the second required sending the voting card to the chairman, no later than on the election day. Candidates who obtained more

than half of the votes cast (absolute majority) were considered to be elected. If candidates received an even number of votes, the winner was selected in a draw [7].

Two types of members were included in the Act on medical chambers. The first one comprised all those who were obliged to be members, i.e. all the practising physicians in a given area. The second type included individuals who had the right to practise medicine, but did not exercise it. They could join the chamber voluntarily, and be listed as members upon the approval of the Chamber Council.

“The right to practise medicine” was understood as follows: according to the provisions of law, the right to practise medicine was granted to a Polish citizen who had a medical diploma issued or recognised by one of medical departments at a Polish university, who had a one year hospital internship, and was not legally incapacitated due to a mental disorder. According to the medical self-government, the right to practise medicine involved all the medicine-related activities performed by physicians: treating patients, conducting research, working in a laboratory or in administration; it applied to both civilian and military physicians. Another view was strictly associated with the criterion of medical assistance, and was preferred by the administrative and military authorities. Therefore, only physicians who registered at the Ministry of Public Health, and signed the list in the relevant chamber could treat patients. Following the act, doctors were obliged to inform the medical chamber about giving up practice, change of address, potential conflicts or inadequate working and payment conditions. A physician practising in more than one location could be a member of one chamber only [8].

Following the act of self-government, physicians were represented by medical chambers, with legal personality, and the Chief Medical Chamber of Physicians (CMC). The chambers were established for independent settlement of problems regarding the well-being and living conditions of physicians, managing tasks and goals related to performance of medical duties with regard to the society and other physicians, as well as to guard the rights, dignity and diligence of physicians, and co-operate with state institutions and local authorities in solving problems associated with public health. The chambers were established to cooperate with state and local government offices. The tasks of medical chambers included also managing the assets, setting up fees to cover the expenses of a chamber and associated institutions, and development of regulations. They could also start and manage institutions offering support to physicians in case of ill health, old age, inability to work, or accidents, as well as provide assistance to widows and orphans of doctors.



**Figure 1.** Presidium of the Warsaw-Bialystok Medical Chamber Convention, 4 April 1937. Left to right: K. Bacia, MD, PhD, S. Kapuściński, MD, PhD, Professor Władysław Szenajch - President, Adam Pietrasiewicz, MD, PhD (source: NAC, no. 1-C-74-1)

**Rycina 1.** Prezydium Zjazdu Izby Lekarskiej Warszawsko-Białostockiej 4.04.1937. Od lewej: dr K. Bacia, doc. S. Kapuściński, prezes prof. Władysław Szenajch, dr Adam Pietrasiewicz (źródło: NAC, syg. 1-C-74-1)

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Chamber bodies included: chamber council, revision committee and disciplinary courts. Medical chamber council comprised at least 20 people, selected by secret ballot by all the physicians in a chamber, for the period of three years. Each chamber council elected their own board (executive organ) of 5 to 9 members, and their deputies in a number corresponding to the number of board members, for a period of one year. Half of the board members were selected every year, to replace the withdrawing ones. The chamber board elected among themselves a chairman, one or two deputies, a secretary, and a treasurer [9]. A medical court, which settled disputes between doctors, acted as a disciplinary body. It was elected for one year, and comprised 12 to 24 members and a corresponding number of deputies. The chamber court could use the following disciplinary tools: warning, admonition, reprimand, withdrawal of the right to practise medicine for up to a year, and withdrawing membership in the medical chamber, which effectively deprived one of the right to practise medicine. The additional penalties included publication of a verdict with the name in an official chamber journal, removal of the right to vote or be elected for one term of the chamber council, and a fine of 50 thousand marks. In the case of government, civilian and military physicians, the additional penalties was limited to removal of the right to vote and be elected, but only for one term [10].

District medical chambers were subject to the Chief Medical Chamber (CMC) in Warsaw. It comprised the representatives from provincial chambers, who gathered for the first time on 9 June 1923 to elect their management board. The term of the CMC was three years; in the



**Figure 2.** Warsaw-Bialystok Medical Chamber Convention in Warsaw on 4 April 1937. View of the meeting hall (source: NAC, no. 1-C-74-2)

**Rycina 2.** Zjazd Izby Lekarskiej Warszawsko-Białostockiej w Warszawie 4.04.1937. Widok na salę obrad (źródło: NAC, syg. 1-C-74-2)

interwar period the management board was elected five times. In the first I (1923-1925) and second (1925-1928) term the chairman was Jan Bączkiewicz, in the subsequent two terms (1929-1931, 1932-1934) the chairman was Witold Chodźko, and in the fifth (1935-1939) Mieczysław Michałowicz became the head of the management board [11].

The Chief Medical Board was a consultative institution, co-operating with authorities in problems regarding medical practice, supervising individual medical chambers with regard to the legality and effectiveness of their activities, and it was created to regulate and manage the activity of chambers in issues unregulated by specific provisions of the act. The CMC was also an appeal body in disputes between the chamber and physicians, between individual chambers, and in the matters of professional ethics. The CMC was composed of the management board, revision committee, and disciplinary court [12].

The official journal of CMC and the District Poznańsko-Pomorska Medical Chamber since 1924 was "Nowiny Lekarskie" [*Medical News*]. It published information about the matters regarding unions and self-government, including annual reports, as well as announcements, protocols, communications and advertisements. In 1927, the social affairs section evolved into an individual journal, "Nowiny Społeczno-Lekarskie" [*Social and Medical News*]. Three years later, the CMC started publishing "Dziennik Urzędowy Izb Lekarskich" [*Official Journal of Medical Chambers*], which presented problems related to medical chambers, as well as legal



**Figure 3.** Meeting of the Supreme Medical Chamber in Warsaw on 30 May 1937. Presidium members, left to right: Adam Pietrasiewicz, MD, PhD, vice-presidents: Władysław Stryjeński, MD, PhD and Professor Władysław Szenajch, Professor Mieczysław Michałowicz- President, Professor Witold Nowicki and secretary Adam Huszcza (source: NAC, no. 1-C-73-1)

**Rycina 3.** Posiedzenie NIL w Warszawie 30.05.1937 r. Członkowie Prezydium, od lewej: dr Adam Pietrasiewicz, wiceprezysi dr Władysław Stryjeński i prof. Władysław Szenajch, prezes prof. Mieczysław Michałowicz, prof. Witold Nowicki oraz sekretarz dr Adam Huszcza (źródło: NAC, syg. syg. 1-C-73-1)

acts, and verdicts of disciplinary courts, information about available posts, and advertisements.

Reports and the communications of medical chambers were also published in "Polska Gazeta Lekarska" [*Polish Medical Gazette*] "Warszawskie Czasopismo Lekarskie" [*Warsaw Medical Journal*] and "Lekarz Polski" [*Polish Physician*]. The system of medical self-government was modified by the Act on medical chambers of 15 March 1934. Contrary to the act of 1921, it defined more precisely the tasks of the medical self-government: co-operation with national and local authorities in the matters of public health, promoting and guarding the principles of professional ethics, dignity and diligence among the members, representing the medical profession of the public forum, and defending its good interest, supervision over the financial standing of the members, in particular establishing and managing institutions providing insurance and assistance to the members and their families. Chambers were also to collaborate with government authorities in matters related to supervision over medical practice, they also actively supported scientific and social institutions, as well as disciplinary and arbitration courts. Moreover, medical chambers assigned the titles of specialists, were involved in the reform of medical studies, and post-graduate education [13]. The new act clarified the principles of registering new members. Physicians were registered by the chambers according to the place of their residence, even if their medical practice was at another chamber's area. The number of members in various bodies also changed, and their terms were extended to 5 years.



**Figure 4.** Meeting of the Supreme Medical Chamber on 30 May 1937. View of the hall (source: NAC, no. 1-C-73-2)

**Rycina 4.** Posiedzenie NIL 30.05.1937 r., widok na salę (źródło: NAC, syg. syg. 1-C-73-2)

Following the new provisions, the chamber council comprised at least 30 members (previously 20), the board comprised 6 to 12 members (previously 5 – 9), and the chamber court had 12 to 18 members (previously 12 – 24). The title of the head of the management board also changed, from "chairman" to "president", who was elected, together with a secretary and a treasurer, among the management board members for a 3-year term. The act of 1934 strengthened the position of CMC, composed of representatives of district chambers [14].

In the 2<sup>nd</sup> Republic of Poland, dentists were not members of medical chambers. The Act on the chambers of physicians and dentists of 11 January 1938, provided dentists with their own professional self-government, modelled on the chambers of physicians. The objectives and structure of dentists' self-government were analogous to those of physicians' chambers. Four chambers were established, with offices in Warsaw (the area of the capital city of Warsaw), Vilnius (including Białostockie, Nowogródzkie, Poleskie, Warszawskie and Wileńskie voivodeships), Kraków (including Kieleckie, Krakowskie, Lubelskie, Lwowskie, Stanisławowskie, Tarnopolskie and Wołyńskie voivodeships) and Poznań (including Łódzkie, Pomorskie, Poznańskie and Śląskie voivodeships).

The elections for the district chambers of physicians and dentists took place in September and October of 1938 [15]. The Chief Chamber of Physicians and Dentists (CCP-D) started operating at the end of 1938. It comprised representatives of district chambers, following the rule that one representative and a deputy were

appointed per 200 members of a chamber, for a 5-year term. CCP-D bodies included chamber council, revision committee and disciplinary court. The first president of CCP-D was Julian Łączyński, and Stanisław Bloch became the vice-president. Similarly to the CMC, the chamber published a bulletin presenting affairs related to self-government, "Dziennik Urzędowy Izby Lekarsko-Dentystycznych" [*Official Journal of the Chambers of Physicians and Dentists*] [16].

A few words should also be said about military physicians. Military physicians in Poland had no tradition of uniting. In the 2<sup>nd</sup> Republic, membership in a chamber was obligatory for all the practising physicians residing in a given area. Naturally, this obligation seemed to apply to military physicians as well. Prior to passing the act on medical self-government, in 1920, the 6<sup>th</sup> Sanitary Department issued a regulation stating that officers running a medical practice had to register. In a circular published on 27 February 1924, Ministry of Military Affairs explained that all military physicians running a private practice apart from military functions must register with the medical chambers. Three months later, the Ministry clarified that the term "medical practice" was limited to work involving direct contact with a patient, in a hospital, or in a private office, and did not apply to medical activities such as research, laboratory or administrative work. Therefore, military physicians whose job involved only sanitary administrative functions, and not treating patients, as well as those who treated military personnel and civilians in hospitals, but did not run a private practice, were not obliged to register in medical chambers. This was confirmed by the opinion of the Ministry of Military Affairs, stating that military physicians did not have to be members of medical chambers, especially since the ministry supervised their medical practice, as part of their service duties. Medical chambers presented a different view. They decided that the term "medical practice" included not only doctors treating patients, but also those working in sanitary administration. The management board of the Warszawsko-Białostocka Medical Chamber added physicians working in diagnostic laboratories, Roentgen laboratories, and natural medicine facilities to this group [17]. Another controversial issue was the accountability of military physicians in medical chamber courts. Military physicians, in the case of conflict with civilian doctors, claimed that the disputes should be settled by the military court of honour. The chamber authorities, on the other hand, considered the regular court of honour, in which arbiters were selected by both sides, as the most competent body. The issue was eventually regulated in the Act on the chambers of physicians of 15 March 1934, in which article 20 [1] stipulated that office and self-government physicians should not be held accountable disputes before

disciplinary chamber courts. Clearly, all these problems resulted in chaos that impaired the work of medical chambers. Unfortunately, these issues were not completely settled before the outbreak of the Second World War [18].

Establishing the medical, and then medical and dental chambers in the Second Republic of Poland was acknowledged as a great achievement of the medical milieu. Despite critical opinions, the organisation supported physicians in their education, professional integration and during conflicts with patients, or between doctors.

The activity of pre-war medical chambers and chambers of physicians and dentists ended on 26 January 1940, when Dr. Johann Kamiński (Distriktarzt) notified the Chief Chamber of Physicians and Dentists that the medical chambers had been dissolved. Before the final dissolution of the organisation, the German authorities ordered registration of all physicians residing in the areas of individual chambers, and demanded a declaration of nationality - Questionnaire for the first registration of medical professions (Fragebogen zur erstmaligen Meldung der Heilberufe).

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# Polish physicians in the army of the Kingdom of Belgium, 1832-1853

Polscy lekarze w armii Królestwa Belgii w latach 1832-1853

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**Abstract.** The author presents the fate of two Polish military physicians who, after the capitulation of the Polish army in the autumn of 1831, joined the Kingdom of Belgium army. Teofil Sulikowski, a surgeon, took part in the siege of the Antwerp Citadel in December 1832. Jan Piotr Jastrzembki served as an assistant physician in the reserve army. In December 1833 they were both dismissed from the army due to medical staff reduction. J.P. Jastrzembki returned to military service after a few months. He was retired in 1853.

**Keywords:** emigrant physicians after capitulation of the Polish army in 1831, forced retirement in 1853, service in the Kingdom of Belgium army

**Streszczenie.** W artykule przedstawiono losy dwóch polskich lekarzy wojskowych, którzy po kapitulacji polskiej armii jesienią 1831 r. wstąpili do armii Królestwa Belgii w 1832 r. Chirurg Teofil Sulikowski brał udział w oblężeniu cytadeli w Antwerpii w grudniu 1832 r. Jan Piotr Jastrzembki pełnił służbę jako lekarz pomocniczy w armii rezerwowej. W grudniu 1833 r. obaj zostali zwolnieni z armii z powodu redukcji personelu medycznego. J.P. Jastrzembki po kilku miesiącach wrócił do służby. Został przeniesiony na emeryturę w 1853 r.

**Słowa kluczowe:** lekarze-emigranci po kapitulacji polskiej armii w 1831 r., służba w armii Królestwa Belgii, wymuszona emerytura w 1853 r.

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## Introduction

Following the surrender of the Polish Army in the Russian-Polish war, Polish units were left in two internment zones, in the Prussian and Austrian Partitions. Thousands of Polish soldiers and officers interned by the Prussians after crossing the Russian-Prussian border near Brodnica, were moved to the area of Elbląg and Gdańsk. Some of them returned to the Russian Partition, and signed a declaration of loyalty to the Tsar. Others tried to get to France, where a Polish legion was to be formed. The main route of the military emigrants from Prussia led through Malbork, Chojnice, Wałcz, Gorzów, Frankfurt on the Oder, Luben, Leipzig, Eisenach and Frankfurt on the Main to Strasbourg. Then they marched on to France, around the Kingdom of Belgium. Emigrants from Galicia went through Silesia, Bavaria, Württemberg and Switzerland.

The first Polish emigrants crossed the border of the Kingdom of Belgium in mid-October. Belgian newspapers mentioned on 10 December 1831 that eleven Polish military emigrants stayed in Brussels, including nine officers; among them were Col. Kazimierz Paszkowicz and Maj. Piotr Urbański. On 30 January 1832, another ten emigrants stopped in Brussels on their way to France: a colonel, a captain, five lieutenants, a physician, a courier and a servant. They were not mentioned by name, so we do not know the identity of the physician travelling in this group.

## Assistance from Belgians

While travelling through Belgium, Polish emigrants received help from the Temporary Commission of the Polish Committee, established in late November 1831, whose goal was to provide accommodation and financial

support for Poles. The committee board had five members: the chairman, Count Felix de Merode, his deputy, Louis Jottrand (attorney), the secretary, Edouard Ducpetiaux (politician), the treasurer J. Nicolay, and Philippe Lesbroussart (politician). The committee also included two high-ranking officers: General Juan van Halen, and Colonel Duke Achilles Murat, as reported by "Journal de Belgique". These names are not familiar to Polish readers, but for Belgians they are symbols of the newly forming national spirit in the recently created Kingdom of Belgium. The establishment of the Belgian committee after the surrender of the Polish Army, who did not receive any help from other countries (?), was a reaction to the appalling speech of Horace Sebastiani, the French Minister of Foreign Affairs: having learnt the capital of the Kingdom of Poland was once more under Russian control, he publicly stated: "Order prevails in Warsaw".

Contrary to the French, Belgians owed Poles a lot. The outbreak of the November Uprising in 1830 in Warsaw interfered with Tsar Nicholas' plans to send a military expedition to help the king of Netherlands, William I, suppress the August Revolution in Brussels in 1830, inspired by the French Revolution in July. The elite regiments and divisions of the Kingdom of Poland were to lead the Russian intervention. King William I did not receive the support from Tsar. Belgium proclaimed independence, acknowledged by England and France, and on 21 July 1831, Leopold I from the Sachsen-Coburg dynasty, a relative of the British queen, became the King.

In swearing loyalty to the Kingdom of Belgium, Leopold I realised that apart from the English and French support, the new country needed a strong army. There was no shortage of volunteers, but there were no commanders available. After the Congress of Vienna in 1815, and incorporation of Belgium into the Kingdom of the Netherlands, the Dutch did not promote Belgians to officer ranks, thus precluding them from developing military careers. The Dutch decided not to train officers who could conspire and revolt against them, and in favourable circumstances even start a military rebellion, leading Belgian soldiers and non-commissioned officers. They understood that soldiers do not win battles and wars on their own. On 25 December 1831, the Brussels journal *Moniteur* informed that the newly-formed Belgian army featured 1,531 officers, including 1088 volunteers (*volontaires*), 402 officers from the Dutch army – 52 native Dutchmen and 212 Germans.

Earlier, on 22 September 1831, a government act authorised King Leopold I to accept as many foreign officers to the Belgian army as he considers fit or necessary for the good of the kingdom. According to one of the provisions, the authorisation would cease after signing a peace treaty. The act was created primarily with

French and English officers in mind. Its announcement coincided with the information about the march of the defeated army of the Kingdom of Poland towards the Prussian border, and the initiative to set up committees offering assistance to Polish military emigrants in Belgium.

Count de Merode offered his tenement house at 18 Boulevard de Waterloo as the offices of the Polish Committee. Clothes, food, medicines and first-aid material for Polish military emigrants were collected there. The Committee granted financial benefits of 80 Belgian francs per month to second lieutenants and lieutenants, 90 francs to captains, 100 francs to majors and lieutenant colonels, in two two-weekly instalments. The sources of funding were varied. For instance, Louis de Potter, one of the initiators and leaders of the August revolution, donated 832 francs and 60 cents to the Polish Committee. For his work in the Temporary Government, he received from the National Congress remuneration of 11,832 francs and 60 cents: 5500 francs he donated to poor citizens of Brussels and bestowed the remaining amount to priest de Haerne, one of the founding members of the Polish Committee. Apart from the financial support, every Polish emigrant received a coupon for clothes, undergarments, bed sheets and shoes.

On 5 January 1832, Joachim Lelewel and Walerian Pietkiewicz, in an address to the Polish National Committee in Paris, thanked the Belgian Polish Committee for the assistance given to Polish emigrants. The Brussels *Courrier Belge* printed out the address a few days later, on 11 January, in issue no. 13: "The collected gifts are not only proof of fellowship between Belgians and Poles, and appreciation for our sacred cause," wrote Lelewel and Pietkiewicz. "Today, the expression of national friendship sustains the hopes of the nations that strive for independence, and make efforts to stop the unworthy swindles of the Northern governments. (...) Belgians and Poles, we are united by the same cause, and our common enemies are those who threaten to impose on you the monarch's sceptre that you threw off ever so heroically (...)." By 28 January 1832, the Polish Committee had collected 11,163 Belgian francs, of which 2416 francs were spent on benefits for Polish emigrants who did not linger in Belgium on their way to France.

### Military plans of the Belgian king

On 20 February, King Leopold I ordered Count Charles Le Hon, Belgian ambassador and Minister to Paris, to contact Polish generals in Paris, after informing the French king, Louis Philippe. A few days earlier, the French government had rejected the project of forming a legion comprising Polish emigrants. Leopold I decided to form such legion in the Belgian army, and in early March

he authorised Ambassador-Minister Le Hon to recruit Polish soldiers and officers to this unit.

No assistance or understanding could be expected from the French government or king. Unexpectedly, Lt. Col. Feliks Prot Prószyński, adjutant of Generals Jan Zygmunt Skrzynecki and Jan Nepomucen Umiński in the Russian-Polish war, came to the king's rescue. There are no documents revealing who recommended that excellent artilleryman to the king, or how. It must have taken place in the first half of March 1832, as at that time the lieutenant colonel started preparing lists of officers as candidates for the Polish legion. King Leopold I trusted him after their first conversation in person, and he was not let down. On 31 March 1832, Prot Prószyński was enrolled in the Belgian army as the first Polish officer-emigrant, preserving his lieutenant colonel rank from the Russian-Polish war. The second one was Colonel Mercel Ignacy Kruszewski, called by Lt. Col. Prószyński to Belgium from Dresden, when, acting on the orders of Gen. Józef Bem, he had organised transfers of interned Polish military emigrants from Austria to Paris.

My efforts to find any traces of Feliks Prot Prószyński, an excellent artilleryman, forgotten by our history, in the Belgian archives and museums were unsuccessful. He did not leave a journal, memoirs or portrait; only a few handwritten official letters. Col. Władysław Zamoyski provided the most concise description of Prot Prószyński: "A Lithuanian, clever, familiar with the military issues, using quite stringent language, and not universally liked". He did not add that Prot Prószyński spoke excellent French, and in the Russian-Polish war he demonstrated a genuine flair for diplomacy.

Authorised by the Belgian king, Prot Prószyński left for Paris, where he met with the French marshal Nicolas Soult. In a private, honest conversation, Soult revealed that the unwillingness of France and the prohibition to form the Polish legion resulted from the fear of negative reactions from Russia and Prussia. Lt. Col. Prószyński accepted this opinion, and set off to internment depots in the hope of recruiting recruit Polish officers. The available documents do not indicate that Prot Prószyński intended to recruit his compatriots to the Belgian army, Lithuanians who – contrary to himself – were not exonerated by the amnesty of Tsar Nicolas I. However, among the recruited officers-emigrants in France were Jan Piotr Jastrzembki, son of Stanisław and Dorota Janson, born on 24 June 1805 in Vilnius. He was enrolled in the Army of the Kingdom of Belgium on 20 June 1832, as an assistant physician in the reserve force.

According to the documents in Archives du Musée Royal de l'Armée (A.M.R.A.) in Brussels, in 1831, J.P. Jastrzembki, aged 25 years, was called to work at the Russian military hospital in Vilnius. He deserted from the Russian Army, and joined a unit of volunteers in Lithuania,

led by Col. Wincenty Matuszewicz. On 22 May 1831, he became a military physician in this unit. He went with the troops to the Kingdom of Poland, and on 21 August was promoted to battalion physician in the 3rd Rifle Regiment of Infantry in the corps of Gen. Henryk Dembiński. According to the records, on the 6 and 7 September he was a physician in Warsaw hospitals during the Russian attack. On 2 October he was interned in Prussia, from where he emigrated to France, aware of Russian repressions towards Lithuanians. There he was recruited to the Belgian army by Lt. Col. Prot Prószyński.

Another physician, enrolled two months later, was Teofil Sulikowski, son of Karol and Tekla, born in Kraków. With his surgical education, he started his military service during the Russian-Polish war as a regiment physician. On 28 February 1831, he became the Chief Physician in the Officer Hospital in Warsaw. On 14 July, he became the Chief Physician in the corps with which he crossed the Prussian border. Sulikowski emigrated to France. Recruited by Lt. Col. Prószyński, he enrolled to the army of the Kingdom of Belgium as a battalion physician and surgeon, allocated to the 2<sup>nd</sup> Division as senior physician.

By the end of 1832, 37 Polish officers, from second lieutenant to colonel, were enrolled in the Belgian army. There would surely be more of them, maybe also physicians, if the Minister of War, count de Merode, who was friendly towards Poles but who was replaced by a naturalised Frenchman, Baron Louis Evain (Fig. 1). His first decisions as minister adversely affected officers from Poland, who wanted to join the army.

Baron Evain used a letter from Captain Franciszek Żaba, whose wish to enrol in the Belgian army was strong, that he offered to serve as lieutenant, to offer every Polish officer a lower rank. Some of them accepted the offer, but Major Aleksander Froelich, in the Russian-Polish war adjutant of Generals Chłopicki and Radziwiłł, Cavalier of the Virtuti Militari Cross, rejected the proposition. He appealed in writing to Minister Evain. Having received an evasive reply, he sent another letter, in which he stated that the promotion to major in the Polish army was lawful, so he had the right to keep it in the Belgian army. Minister Evain could not dismiss this argument, so he approved the rank of major. For 15 years of service in leading positions in the artillery of the Kingdom of Belgium, Major Froelich was surprisingly passed for promotion, although he deserved at least one, due to seniority. A few other officers followed suit and appealed the unfair proposition of Minister Evain. Personal, sometimes harsh, interventions resulted in the approval of the ranks from the Polish Army granted to the following officers: Captain Maurycy Grabowski, Lieutenants Karol Leonard de Saint Cyr, Ignacy Michałowski and Modest Rottermund, and Second Lieutenant Józef Ostrowski. In the case of officers "demoted" by the minister, who accepted lower ranks

without objection, the ranks from the Polish Army were accepted as honorary (*range honoraire*).



**Figure 1.** General, Baron Luis Evain

**Rycina 1.** General baron Louis Evain

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Where did the critical, or even vicious attitude of Minister Evain to Polish officers come from? He had very close personal contacts and friendships with the representatives of the French government and army, who were against the formation of the legion and units with the participation of Polish military immigrants. Doubtlessly he felt a Frenchman. It would seem that the forming Belgian army would be eager to enrol physicians, surgeons and those of other specialisations, with experience gained in the Russian-Polish war, without all those barriers and difficulties the line officers faced. During the term of Minister Evain, only two were enrolled.

### By the Antwerp Citadel under siege

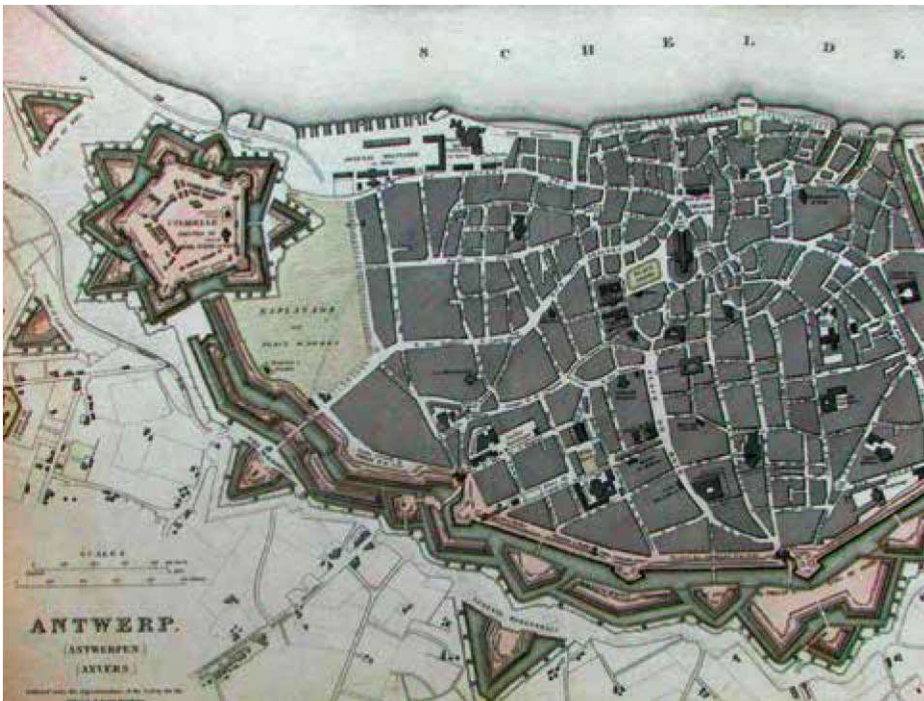
On 29 November 1833, the second anniversary of the November Uprising in Warsaw, the siege of the citadel-bastion in Antwerp started (Fig. 2). A month before, France and England declared help to allow the Kingdom of Belgium to regain the city and the Citadel, which was

one of the provisions of the Treaty of 24 Articles, concluded between the Kingdom of the Netherlands and Belgium. The Dutch did not return Antwerp, and placed 5 thousand soldiers led by Henri David Chasse, former officer of Napoleon, baron of the French Empire in the fortified bastion. In 1814, he betrayed Napoleon Bonaparte, fighting against him in the battle of Waterloo. King William I appointed him the commander of the Dutch defence of the fortress, and demanded unrelenting defence to the last soldier.

The newly created Belgian army was too weak and inexperienced to win the bastion independently. Therefore, the French sent an intervention corps of 60 thousand soldiers led by Marshal Étienne Maurice Gérard. The combined French and English fleet blocked the Dutch ports, to cut off potential assistance for the Citadel from the Northern Sea (Fig. 3).

Both the besiegers and the besieged decided to save the city with its historic architecture. The French attacked from the undeveloped, most fortified side, and the besieged did not shoot towards the city's buildings. A few Poles, officers of the Belgian army, participated in the fight supporting the French corps. Lt. Col. Prot Prószyński co-commanded the artillery, and Teofil Sulikowski was one of the most active physicians in the sanitary service of the French corps. Two other Polish officers who were not officially enrolled in the Belgian army: Colonel Władysław Zamoyski and Captain Bernard Potocki, participated in the siege as observers. They pinned their Virtuti Military crosses, received in the Russian-Polish war, to their civilian clothes.

On Sunday, 2 December, Colonel Zamoyski described the fighting in a letter to his uncle, Prince Adam Jerzy Czartoryski in Paris: "The fire is moderate. A few times a day (the Dutch – author's note) try to send soldiers for various minor goals. Usually, their efforts are countered, and they suffer losses. This morning, during one such excursion, they came so close that a French artillery officer bumped into a Dutch soldier, and brought him by the neck. One or two people on each side dies on these occasions. The Belgians are mighty sad and unhappy to watch it from afar. The response to the first bomb dropped on the city will be fifty Belgian mortars directed at the Citadel. Ten French batteries and four mortars are preparing at the moment. I believe that the day after tomorrow they will open fire, and they trust that the Dutch fire will stop within thirty-six hours". It did not. The Dutch fought bravely, without any hope of help. The physicians of the besieging corpse had their hands full in the camp hospital. One of them, Teofil Sulikowski, demonstrated outstanding calm and precision in the surgeries he performed.



**Figure 2.** Antwerp city plan, including the citadel (Museum - Rubens House in Antwerp)

**Rycina 2.** Plan miasta Antwerpii z cytadelą (Muzeum - Dom Rubensa w Antwerpii)

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**Figure 3.** Horace Vernet, Citadel siege, 1840

**Rycina 3.** Horace Vernet, Oblężenie cytadeli w Antwerpii, 1840

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Colonel Zamoyski, a perceptive eye witness to the siege, wrote: "The siege lasted twenty four days. The fire by the Dutch artillery was unceasing. The French, on their side, continuously bombed the Citadel. At the end, one of the bombs went through the roof, fell into the main powder storage, and it exploded. As far as I am aware, this finally

broke the commander's resolve. When hole in the wall was made, and the French started preparations to cross the trench and attack, Gen. Chassé decided that his responsibility towards the king (William I - author's note) was fulfilled, and he could surrender with honour. Today,

on 23 December, the fire ceased. The Dutch surrendered.”



**Figure 4.** Antwerp citadel siege  
**Rycina 4.** Obleżenie antwerpskiej  
cytadeli

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Not many equally detailed descriptions of the siege and defeat of the Citadel as that by Colonel Zamoyski are preserved in the Belgian and French historiography.

General Józef Bem witnessed the Dutch surrender. On 18 December, he came from Paris, and tried to enrol in the army. Władysław Zamoyski wrote about Bem to his uncle, Prince Czartoryski “I believe that he wants to ask the Belgian king to form a Polish Army unit in Belgium; he would agree to any colours, as long as he could have only Poles around him. It would be splendid if the king were open to the idea (...)”.

King Leopold I was not interested in General Bem. He hoped to get Jan Skrzynecki, interned by the Austrians, and when it proved impossible, he showed interest in General Wojciech Chrzanowski, with the intention of making him division commander. The turmoil and outrage at the idea among Polish emigrants prompted Leopold I to change his plans. Nearly all the Polish officers serving in the Belgian army joined the protests. They sent a letter to the Polish National Committee in Paris, addressed to its chairman, General Józef Dwernicki. In the letter they declared they would leave the service in the Belgian army if General Chrzanowski were enrolled. Colonel Ignacy Marcel Kruszewski was the only one who did not sign the document.

General Chrzanowski was pronounced a traitor and renegade, expelled from the milieu of emigrants, when after the surrender of Warsaw he stayed in the city, and swore his loyalty and fidelity to tsar. When he received a passport to Austria from the Russians, he left the Kingdom of Poland and without any obstacles arrived in France. After the protests he quickly left Belgium, as did General Bem. Years later, we can only imagine how difficult the position of Lt. Col. Prot Prószyński was. In the Russian-Polish war he was a chief of staff to General Chrzanowski, and after his arrival in Belgium he recommended the general to King Leopold I. Prot Prószyński also held General Bem in high esteem, but his attitude may have been affected by the General's constant efforts to discredit Chrzanowski, and preventing his candidacy for any position. Preoccupied by directing the artillery fire on the Antwerp Citadel, Prot Prószyński did not have time to meet and talk with both generals.

According to the French command, his work was precise, effective and perfect. On 23 January 1833, a group of French and Belgian officers, as well as Polish officers in Belgian uniforms, including battalion physician Teofil Sulikowski, witnessed the decoration of Lieutenant Colonel Prot Prószyński with the French Legion of Honour. The cross, awarded by the French King Louis Philippe, was given by King Leopold I, who embraced his favourite officer warmly.



**Figure 5.** A mortar used to batter the citadel

**Rycina 5.** Moździerz, którym bombardowano cytadelę

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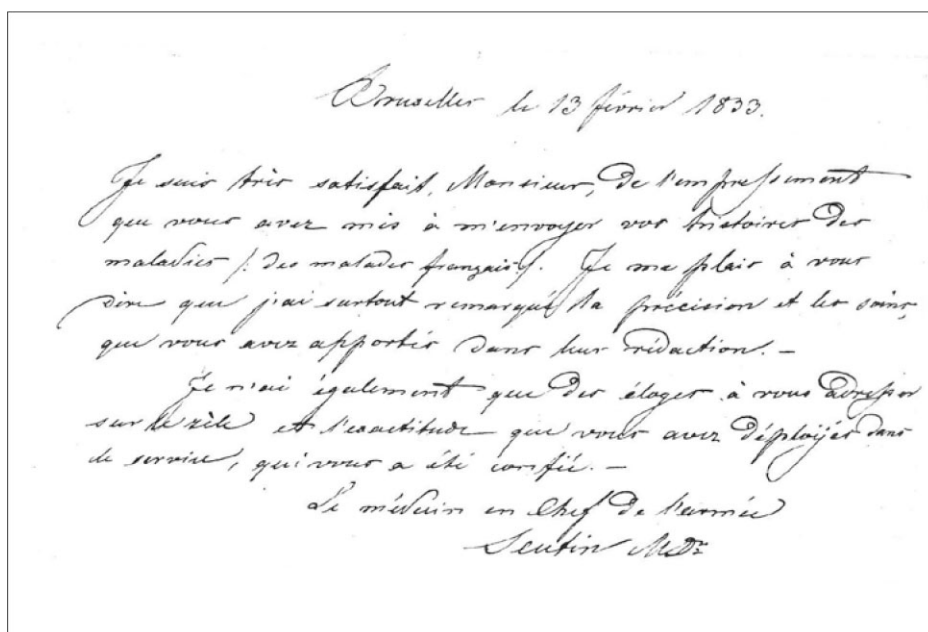
**Figure 6.** Citadel remains after the surrender (Royal Museum of Fine Arts in Brussels)

**Rycina 6.** Widok resztek cytadeli po kapitulacji obrońców (obraz Muzeum Królewskiego Sztuk Pięknych w Brukseli)

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Prot Prószyński was the first Polish officer from the post-Napoleonic generation who could pin to his Belgian uniform a red ribbon with the Legion of Honour, next to the blue ribbon with Virtuti Militari Cross. The other Polish officer in a Belgian uniform awarded by the French was Doctor Teofil Sulikowski. Almost a month later, on 13 February, Doctor Sentin, Chief Physician of the French Army, sent Dr. Sulikowski a letter starting as follows: "I am

very satisfied, Monsieur, that I received the medical records so soon. It is my pleasure to inform you that I greatly appreciate the precision and accuracy you demonstrated while preparing them (...)" Later, Dr. Sentin thanked Sulikowski for the careful and effective treatment of the injured French soldiers during the siege of Antwerp Citadel.



**Figure 7.** Letter to Teofil Sulikowski with which Sentin, the Head Physician of the French Army, expresses his gratitude for looking after the wounded and sick Frenchmen at the Antwerp citadel

**Rycina 7.** List do dr. Teofila Sulikowskiego, w którym dr Sentin, naczelny lekarz armii francuskiej, dziękuje za opiekę nad rannymi i chorymi Francuzami pod cytadelą antwerpską

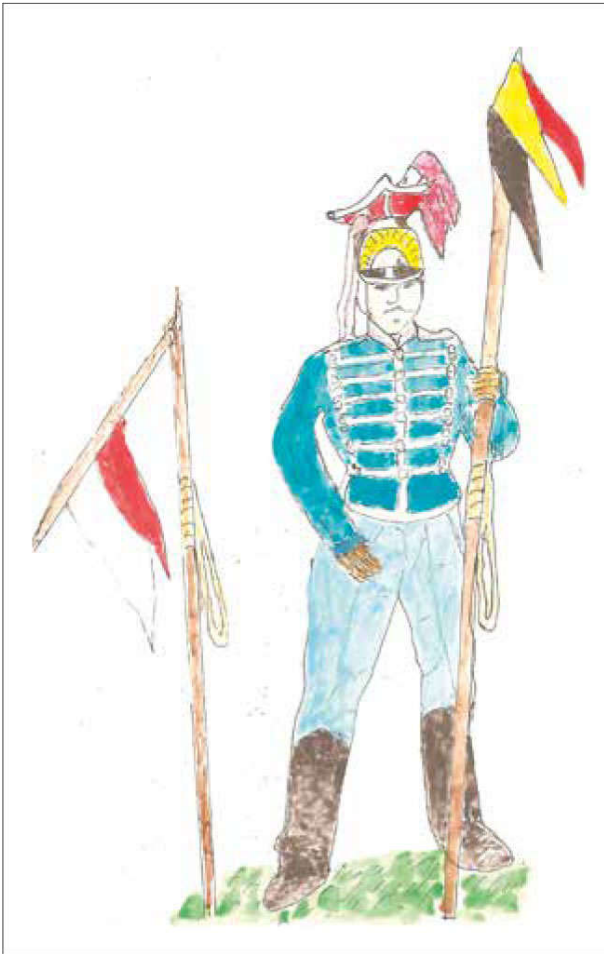
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## In the medical service of the army of Kingdom of Belgium

The Belgians did not appreciate Dr. Sulikowski as much as the French did. On 30 December 1833, he was released from the army of the Kingdom of Belgium, based on a decision signed by Minister Baron Louis Evain. Sulikowski never returned. The official cause was reduction in the number of medical personnel in the army. Doctor Jan Piotr Jastrzembki was also on the list of released officers. For nearly six months he was unemployed. On 5 June 1834, he was restored to the sanitary service in the Belgian army, and allocated to work in a hospital in Bruges. After two weeks, he was moved to the sanitary service in the 3<sup>rd</sup> Division. On 9 February 1835, Jastrzembki started service in the 3<sup>rd</sup> Line Regiment of Infantry. On 31 May 1837, he was moved to the sanitary service of the advance guard, and on 29 June 1839, started work at a hospital in Louvain (today's Leuven). On 30 September 1839, by royal order, Jastrzembki was suspended for one year in his duties as an actively serving physician. The order was a result of partial demobilisation of Belgian army, announced in April that year. On 3 June, an act prolonging by two years the privileges given to officers-foreigners in September 1831 entered into force. It obliged these officers to leave the army if within two years they do not become citizens of the Kingdom of Belgium. As J.P. Jastrzembki did not decide to take citizenship within 12 months, on 28 September 1840, his suspension was prolonged for an undetermined period. In spring of 1841 he decided to apply for citizenship, and on 5 April he obtained

citizenship of the Kingdom of Belgium (regular naturalisation). On 10 July Jastrzembki returned to active military service as an assistant physician, and nine days later he was allocated to the hospital in the Beverloo military camp in Limburg, near the border with the Netherlands, where on 25 July he started service. On 27 November 1842, he was moved to a hospital in Antwerp. On 12 August 1847, he started medical service in the 1<sup>st</sup> Line Regiment of Infantry. On 24 November 1848, he was allocated to a hospital in Namur. On 14 September 1851, after almost twenty years of service in the Belgian army, he received his first promotion: to 2<sup>nd</sup> class battalion physician. In fact, it was hardly a promotion, as this was his rank at the time of his internment in Prussia in 1831. Five days later, Jastrzembki began service in the 5<sup>th</sup> Line Regiment of Infantry.

Similarly to all Polish officers with Belgian citizenship since 1842, he was released from active service in the army. Jastrzembki received the order on 4 April 1852. Nine days later, by the royal order of 12 March 1853, he was retired. Firing Polish officers was a condition for signing agreements regarding mutual military assistance between Belgium and Russia. After the accession of Napoleon III, France, until 1848 an ally and guarantor of Belgian borders, demanded from Belgium restoration of the border from before 1815. Russia was ready to start diplomatic relationships with the Kingdom of Belgium under the condition, unchanged for 20 years, that foreign officers, including Poles, were removed from the Belgian army. King Leopold I and the government decided to meet this condition. Jan Piotr Jastrzembki and other Polish



**Figure 8.** Belgian lancer wearing a uniform containing parts of the Polish Army uniform (© Maciej Kledzik)

**Rycina 8.** Ułan belgijski z fragmentami umundurowania armii polskiej

officers received pensions in the amount of 75% of their pay in active service. A total of 29 Polish officers with Belgian citizenship were retired from the army.

For Belgians, the medical education of Jan Piotr Jastrzembki remained an unclear issue. They enrolled him in the army without any certification of medical

studies, based on his service in the Polish Army, where he was a physician. Robert Bielecki, a historian and author of *The Biographical Dictionary of the Officers of the November Uprising*, writes in the entry about J. Jastrzembki (he does not explain why he changed the spelling of the name “Jastrzembki”) that during the uprising he was a battalion Physician of the 3<sup>rd</sup> Regiment of Mounted Riflemen, came to

Warsaw with Gen. Dembiński, received a diploma for “the merit for the Country”. Bielecki also mentions that on 13 August 1831 the Medical Council decided his qualifications to be a doctor were insufficient. Twenty years of medical service of J.P. Jastrzembki in the army of the Kingdom of Belgium prove that practice and experience in sanitary services and hospitals in the time of war were as good as a certificate from a medical school.

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# Factors impeding wound healing after hernioplasty - personal experience

Czynniki wpływające na utrudnione gojenie się ran po plastyce przepukliny pachwinowej - doświadczenia własne

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**Abstract.** The aim of the study was to determine modifiable and non-modifiable factors significantly affecting the process of wound healing after Lichtenstein tension-free hernia repair. Based on the work, the authors reached the conclusion that patient age, diabetes, overweight, obesity and smoking are all factors adversely affect the process of wound healing after hernioplasty.

**Keywords:** hernioplasty, wound healing, complications

**Streszczenie.** Celem naszej pracy było ustalenie, jakie czynniki modyfikowalne i niemodyfikowalne wpływają w znaczący sposób na proces gojenia się rany pooperacyjnej po plastyce przepukliny pachwinowej sposobem Lichtensteina. Na podstawie naszej pracy wyciągnęliśmy wniosek, że na proces gojenia się rany po plastyce przepukliny pachwinowej negatywny wpływ mają: wiek chorych, cukrzyca, nadwaga i otyłość, a także palenie tytoniu.

**Słowa kluczowe:** plastyka przepukliny pachwinowej, gojenie rany, powikłania

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## Introduction

Inguinal hernias account for approximately 70% of all abdominal hernias, and affect men primarily. It is estimated that 30% of men will develop an inguinal hernia at some point of their lives. Therefore, hernioplasty is among the most common general surgical procedures, accounting for approximately 10% of all surgeries; only appendectomy and cholecystectomy are more often conducted. Currently, tension-free techniques, both laparoscopic and classical, are typically used. The most frequent complications associated with inguinal hernioplasty include: recurrent hernia, chronic pain due to the use of synthetic material, and difficulty with post-operative wound healing [1-3].

Healing of the post-operative wound is affected by numerous factors, both positive and negative. This study discusses the elements that delay, or completely prevent the wound healing process.

Modifiable factors (smoking, nutrition status, stable control of blood glucose), and non-modifiable ones (age, sex, comorbidities, medicines used) were considered in the analysis of the study group. As some of the factors can be modified, educating patients before the planned surgery can affect the treatment outcomes. Patients should be aware that changing certain elements of their behaviour may significantly reduce the risk of complications, such as difficult to heal post-operative wounds.

## Aim of the study

The aim of the study was to determine the factors that adversely affect post-operative wound healing after inguinal hernioplasty. Both non-modifiable and modifiable factors (related to the patient) were taken into consideration.

## Material and methods

The study subjects were patients from the Department of Thoracic, General and Oncological Surgery, who received right-sided or left-sided inguinal hernioplasty in the years 2015 - 2018. The surgeries were elective, and performed with the use of the Lichtenstein procedure. All subjects were qualified for a follow-up in the hospital's General Surgery Clinic (first visits took place 7 to 10 days after the surgery). They all received perioperative prophylactic treatment against infections (a single dose of 1.0 g of cefazolin, administered before the surgery).

The study group comprised patients who attended a follow-up visit after an inguinal hernioplasty (post-hospitalisation) in our general surgery clinic, i.e. 296 patients (231 males and 65 females). The available medical records from the hospital (regarding the hospitalisation period) and from the General Surgery Clinic were analysed. The study group was analysed according to age and sex; comorbidities, nutritional status and tobacco smoking were also considered. The statistical analysis was performed using Statistica 6, and Man-Whitney U-test and Pearson's test were used for calculations.

## Results

Impaired healing of the post-operative wound occurred in 21 patients (7%) who attended the follow-up (post-hospitalisation) visit at the General Surgery Clinic (296 patients). Impaired healing was diagnosed if purulent drainage or leaking of wound content was observed, without signs of wound dehiscence or deep infection.

### Group characteristics according to sex and age

The study group included 65 female (22%) and 231 male (78%) subjects. Impaired wound healing was observed in 5 female (7%) and 16 male (7%) patients. The mean age of the patients was 63 years (females – 61 years, males – 64 years).

The subjects were divided into a few age groups. In the group of patients up to 40 years old impaired healing was found in 1 subject (5%); in the age group of 41 – 50 years old it was observed in 3 subjects (14%); in patients aged 51 to 60 years old problems with wound healing

were found in 13 subjects (62%); in the group of 61 to 70-year-olds 4 patients (19%) were affected, and no cases of impaired wound healing were observed in patients aged over 70 years old. The statistical analysis revealed a significantly lower age in the group of patients with impaired wound healing ( $57.52 \pm 7.53$  vs.  $63.83 \pm 9.45$ ,  $p = 0.001479$ ). No statistical significance was demonstrated between sex and impaired healing of the post-operative wound ( $p = 0.83174$ ). The relationship between impaired wound healing and age is presented on Figure 1 and in Table 1.

### Group characteristics according to the presence of diabetes (DM)

A total of 64 subjects in the study group (21.5%) suffered from diabetes; the condition was found in 11 patients (52%) whose wound healing was impaired.

Statistically significant correlations were observed between the occurrence of impaired wound healing and the presence of diabetes (17.19% vs 4.31%,  $p = 0.00038$ ).

Figure 2 presents the relationship between the occurrence of diabetes and impaired healing.

### Group characteristics according to the presence of arterial hypertension (AH)

A total of 142 subjects in the studied group (48%) had regulated arterial hypertension, and in the group of patients with impaired wound healing the condition was found in 6 patients (28.5%).

The study did not reveal any statistically significant correlations between impaired healing of the post-operative wound and arterial hypertension ( $p = 0.06484$ ).

### Group characteristics according to presence of chronic obstructive pulmonary disease (COPD)

A total of 43 subjects in the studied group (14.5%) had COPD, and in the group of patients with impaired wound healing the condition was found in 11 patients (52%).

No statistically significant correlations were observed between the occurrence of impaired wound healing and the presence of COPD ( $p = 0.5419$ ).

### Group characteristics according to BMI

In the study group 3 patients were underweight (BMI 17 – 18.49), 153 had normal weight (BMI 18.5 – 24.99), 136 were overweight (BMI 25.0 – 29.99), and 4 had 1st degree obesity (BMI 30.0 – 34.99). Difficult wound healing occurred in 2 patients with normal body weight, in 17 overweight patients and in 2 patient with 1st degree obesity. It was demonstrated that impaired wound healing

statistically significantly more often affected overweight (OP) and obese patients (ObP) (12.5% vs 1.31%; 50.0% vs. 1.31%,  $p < 0.0001$ ). Correlations between BMI of the

patients and difficult wound healing are presented in Figure 3.



**Figure 1.** Prevalence of impeded healing depending on age

**Rycina 1.** Występowanie utrudnionego gojenia w zależności od wieku

**Table 1.** Prevalence of impeded healing depending on age

**Tabela 1.** Występowanie utrudnionego gojenia w zależności od wieku

Age group	30-40 years	41-50 years	51-60 years	61-70 years	71-80 years
No. of patients	7	29	66	128	66
No. of patients with impaired healing	1	3	13	4	0

### Group characteristics according to tobacco smoking

74 subjects in the study group (25%) were habitual smokers (S), 46 subjects (15.5%) used to smoke in the past (PS) (more than 6 months since quitting smoking), and 176 subjects (59.5%) never smoked (N). In the group

of patients with disturbed wound healing 16 patients smoked tobacco, and in the group of subjects who never smoked or had not been smoking for at least 6 months only 5 patients experienced wound healing difficulties. Statistically significantly more often the difficulties with

post-operative wound healing were observed in smokers (S vs N vs PS) (21.62% vs 2.27% vs 2.17;  $p < 0.0001$ ).

Correlations between smoking and difficult wound healing are presented in Figure 4.

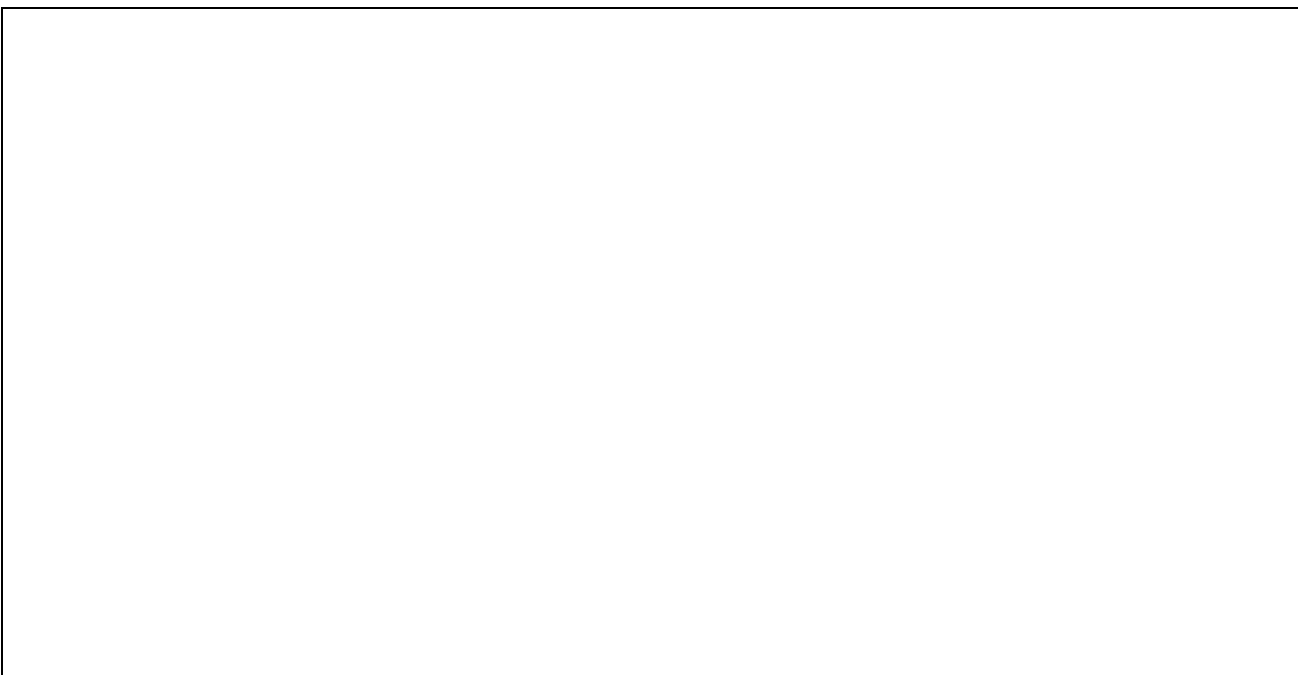
No statistical significance has been found between the concurrence of a few analysed features (compared to

isolated features) and impaired post-operative wound healing ( $p = 0.83173$ ).



**Figure 2.** Prevalence of impeded healing depending on diabetes mellitus

**Rycina 2.** Występowanie utrudnionego gojenia w zależności od cukrzycy (DM)



**Figure 3.** Prevalence of impeded healing depending on BMI**Rycina 3.** Występowanie utrudnionego gojenia w zależności od BMI**Figure 4.** Prevalence of impeded healing depending on smoking**Rycina 4.** Występowanie utrudnionego gojenia w zależności od palenia tytoniu

## Discussion

The wound healing process is a complex mechanism, conditioned by a number of factors. In the first stage the damaged blood vessels constrict, and a clot is formed (to stop bleeding). Next, due to numerous processes and reactions, the damaged tissue is removed, and growth factors for fibroblasts, angioblasts and keratinocytes help to form a scar. The wound healing process can be affected positively or negatively at each stage. Our study analyses both modifiable (tobacco smoking, BMI) and non-modifiable factors (age, sex, comorbidities) [1, 4, 5].

According to Kaye et al., the risk of infection at the surgical site increases with the age of patients by 1.1% for every year between 17 and 65 years of age, then it decreases by 1.2% per year [6-8]. Our study supports this finding; the statistical analysis demonstrated a significantly lower age of patients with impaired wound healing.

The literature provides data illustrating higher incidence of impaired healing in men [9]; however, our study did not reveal a statistically significant correlation between sex and impaired healing of the post-operative wound.

Wound healing, as well as the entire convalescence period, is affected by patient's general status prior to the surgery. Diabetes plays an important role in the post-operative wound healing process, primarily due to the disturbed granulocyte function, and reduced synthesis of the complement system's components. Specific and non-specific immune response are impaired. The factors that adversely affect the healing process also include angiopathy and neuropathy due to unstable diabetes. It is important to maintain glycaemia within the range 100 – 140 mg/dl in the peri-operative and post-operative period, which allows considerable improvement in the local status. Due to a short hospitalisation period after

hernioplasty, patients should be educated about the need to maintain proper glucose levels at home [2, 10, 11].

The study also demonstrated statistically significant correlations were observed between the occurrence of impaired wound healing and the presence of diabetes. A total of 64 subjects in the studied group (21.5%) had diabetes, and in the group of patients with impaired wound healing the condition was found in 11 patients (52%).

The presented study did not reveal any statistically relevant correlations between arterial hypertension and chronic obstructive pulmonary disease and impaired post-operative wound healing.

The available literature also indicates that certain pathogenic factors acting simultaneously can prevent wound healing, although the effect of individual factors have not been identified [3]. Another modifiable factor affecting the post-operative wound healing is body weight. Obesity and overweight directly adversely affect the process of tissue regeneration. It is associated with poor vascularisation and oxygenation of the fat tissue. This can result in reduced penetration of the antibiotic administered peri-operatively, and increase the risk of infection at the surgical site. This is confirmed in the study by Bamgbade [12].

In our study group, wound healing was statistically significantly impaired in overweight (OP) and obese (ObP) patients ( $p < 0.0001$ ).

Tobacco smokers are also in the group of patients with increased risk of impaired wound healing. This is due to the decreased activity of monocytes and granulocytes (reduced phagocytic function). Many smoking patients also suffer from recurring inflammation of the respiratory system. Tissue oxygenation is reduced, and blood coagulation is increased in this group of patients. Moreover, the collagen production is reduced.

Patient education before planned surgeries is very important, and it should be started already at the qualification stage. Patients should quit smoking at least 3 weeks before the surgical procedure, and giving up smoking 6 weeks prior to the surgery ensures the best outcomes. This period of smoking abstinence considerably improves the healing process, and reduces

the risk of impaired healing of the post-operative wound [13, 14]. This finding was confirmed in our study: in smoking patients wound healing impairment was observed statistically significantly more often ( $p < 0.0001$ ).

## Conclusions

The study results supported the following conclusion: the process of post-operative wound healing after inguinal hernioplasty is affected by non-modifiable factors, such as age and diabetes, as well as by modifiable ones, including overweight, obesity and tobacco smoking.

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# New radiological symptoms in chest HRCT in patients with interstitial lung disease in the course of systemic sclerosis and RA

Nowe objawy radiologiczne w obrazach w HRCT u chorych na śródmiąższową chorobę płuc w przebiegu twardziny układowej oraz RZS

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**Abstract.** In systemic connective tissue diseases such as rheumatoid arthritis and systemic sclerosis, many organs, including the lungs, are affected. The aim of the study was to retrospectively compare the incidence of radiological manifestations of pulmonary fibrosis: exuberant honeycombing sign, straight-edge sign and four-corners sign in chest HRCT, as well as bronchiectases and esophageal dilatation in patients with systemic sclerosis (SS-ILD) and rheumatoid arthritis (RA-ILD). Seventy-seven HRCT studies of patients with SS-ILD and ninety-six with RA-ILD were evaluated for lung fibrosis using a method developed by Warrick, and classified into three groups of disease severity. The incidence of exuberant honeycombing sign, straight-edge sign and four-corners sign and bronchiectases in specific subgroups of lung fibrosis severity and incidence of esophageal dilatation were determined. Significantly more advanced lung fibrosis was found in patients with SS-ILD compared to patients with RA-ILD ( $13.33 \pm 6.23$  vs.  $9.80 \pm 6.56$ ,  $p = 0.0004$ ). The frequency of four-corners sign and the combined frequency of exuberant honeycombing sign, straight-edge sign and four-corners sign were significantly higher in the SS-ILD group than RA-ILD (9 [11.68%] vs. 1 [1.04%], respectively,  $p = 0.003$  and 12 [15.58%] vs. 6 [6.25%],  $p = 0.046$ ). These diseases differed significantly in the incidence of bronchiectases (51 patients with SS-ILD [66.23%] and 22 patients with RA-ILD [22.91%],  $p < 1 \times 10^{-6}$ ) and esophageal dilatation (53 patients with SS-ILD [68.83%] and 14 patients with RA-ILD [14.58%],  $p < 1 \times 10^{-6}$ ). The low incidence of all the assessed symptoms, despite significant differences, do not allow to differentiate the type of connective tissue diseases responsible for pulmonary fibrosis based on chest HRCT examination only.

**Keywords:** HRCT, pulmonary fibrosis, rheumatoid arthritis, systemic sclerosis

**Streszczenie.** Cel. W przebiegu układowych chorób tkanki łącznej, takich jak reumatoidalne zapalenie stawów oraz twardzina układowa, dochodzi do zajęcia wielu organów, w tym płuc. Celem badania było retrospektywne porównanie częstości występowania objawów radiologicznych włóknienia płuc: „bujnego” plastra miodu, prostej krawędzi oraz czterech rogów, w badaniach HRCT klatki piersiowej, a także rozstrzeni oskrzeli i poszerzenia przełyku u pacjentów z twardziną układową (SS-ILD) oraz reumatoidalnym zapaleniem stawów (RA-ILD). Material and method. 77 badań HRCT pacjentów z SS-ILD i 96 z RA-ILD oceniono pod względem stopnia włóknienia za pomocą metody opracowanej przez Warricka i zakwalifikowano do trzech grup nasilenia choroby. Określono częstość występowania objawu „bujnego” plastra miodu, objawu prostej krawędzi, objawu czterech rogów i rozstrzeni oskrzeli w poszczególnych podgrupach stopnia nasilenia włóknienia oraz częstość występowania poszerzenia przełyku. Wyniki. U chorych na twardzinę układową stwierdzono znamienne większe nasilenie włóknienia niż u chorych na RZS ( $13,33 \pm 6,23$  vs.  $9,80 \pm 6,56$ ,  $p = 0,0004$ ). Częstość występowania objawu czterech rogów oraz łączna częstość występowania objawu „bujnego” plastra miodu, prostej krawędzi i czterech rogów była znamienne większa w grupie SS-ILD niż RA-ILD (odpowiednio 9 [11,68%] vs. 1 [1,04%],  $p = 0,003$  i 12 [15,58%] vs. 6 [6,25%],  $p = 0,046$ ). Choroby te różniły się znamienne występowaniem rozstrzeni oskrzeli (51 pacjentów z SS-ILD [66,23%] i 22 pacjentów z RA-ILD [22,91%],  $p < 1 \times 10^{-6}$ ).

$10^{-6}$ ) i poszerzeniem przełyku (53 chorych z SS-ILD [68,83%] i 14 chorych z RA-ILD [14,58%],  $p < 1 \times 10^{-6}$ ). Wnioski. Pomimo znamiennych różnic oceniane objawy ze względu na ich ograniczone występowanie nie pozwalają różnicować poszczególnych chorób tkanki łącznej odpowiedzialnych za włóknienie płuc na podstawie jedynie obrazów HRCT klatki piersiowej.

**Słowa kluczowe:** włóknienie płuc, twardzina układowa, reumatoidalne zapalenie stawów, HRCT

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## Introduction

Systemic sclerosis (SS) and rheumatoid arthritis (RA) are heterogeneous autoimmune diseases that may cause interstitial lung disease (ILD) [1]. The aetiology of SS is not fully understood, but it appears that immune-inflammatory processes, damage to blood vessels and hyperproduction of connective tissue are major factors in the pathogenesis of this disease. The combination of these mechanisms results in progressive injury to the involved organs and systems [2, 3]. From a clinical point of view, the most important organ complications include pulmonary complications; they are among the main causes of death in patients with systemic sclerosis, as they account for up to 60% of all the sclerosis-dependent factors. These complication are primarily pulmonary hypertension and ILD [4]. Interstitial lesions in patients with systemic sclerosis (SS-ILD) are frequently observed, as confirmed by autopsy studies in which abnormalities in pulmonary tissue were found in 80% of examined patients [5]. Also the aetiopathogenesis of RA is not fully known, although it differs from in SS; here the immune-inflammatory processes play the key role. In clinical manifestation of RA, the symptoms of joint inflammation dominate, in many patients extra-articular symptoms also occur, including rheumatoid nodules, cardiac lesions (myocarditis, endocarditis, pericarditis), amyloidosis or lesions in the respiratory system (e.g. pleuritis, ILD or pulmonary hypertension). According to different studies,

the frequency of ILD in the course of RA is 30-76% [6]. It is important that RA contributes to the development of atherosclerosis and its complications, which additionally affects the long-term prognosis in this group of patients. In patients with suspected ILD, high-resolution computed tomography (HRCT) of the thorax is the test of choice, as it detects even small abnormalities [7]. The spectrum of radiological pictures of ILD is broad, from ground-glass opacities, which are reversible, to honeycombing and subpleural cysts in the areas where the lung structure has been permanently damaged. HRCT is not only useful in detecting interstitial lesions, but also in assessing their advancement.

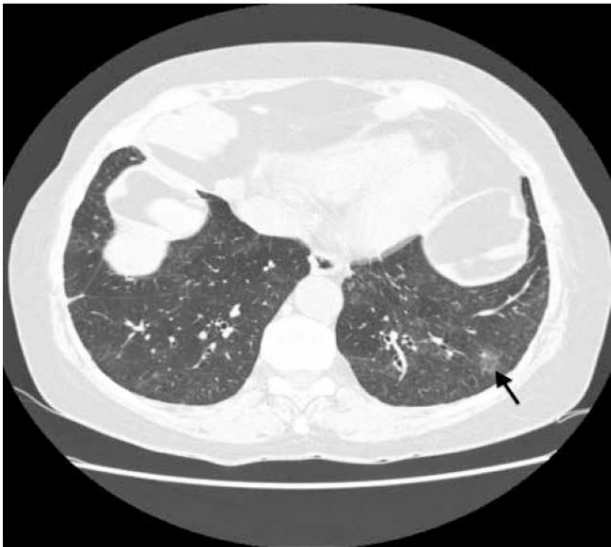
Various scales can be used to provide objective evaluation of the intensity of lesions. One of them is the score developed by Warrick et al. (further referred to as Warrick score); it is a semi-quantitative scale that assesses both the type of interstitial lesions (severity), and their extent. The final results, describing intensity, is a sum of severity and extent scores. Details of the scoring method are presented in Table 1.

Warrick score takes into account the following types of lesions: ground-glass opacities (Fig. 1), irregular pleural margins and pleural thickening, reticular interstitial opacities and subpleural lines (Fig. 2-3), honeycombing (Fig. 4) and subpleural cysts. The maximum score is 30 points – 15 points for the severity and 15 for the extent of the changes [8, 9].

**Table 1. Semi-quantitative scoring method of lung fibrosis by Warrick et al. [9]**

**Tabela 1. Półilościowa metoda oceny włóknienia płuc wg Warricka i wsp. [9]**

Severity		Extent	
Feature	Score	For each feature calculated separately acc. to the no. of involved segments	Score
Ground-glass opacity	1		
Irregular pleural margins and pleural thickening	2	1 to 3 segments involved	1
Reticular fibrotic opacities and subpleural lines	3	4 to 9 segments invaded	2
Honeycombing	4	> 9 segments invaded	3
Subpleural cysts.	5		
Maximum score	15	Maximum score	15



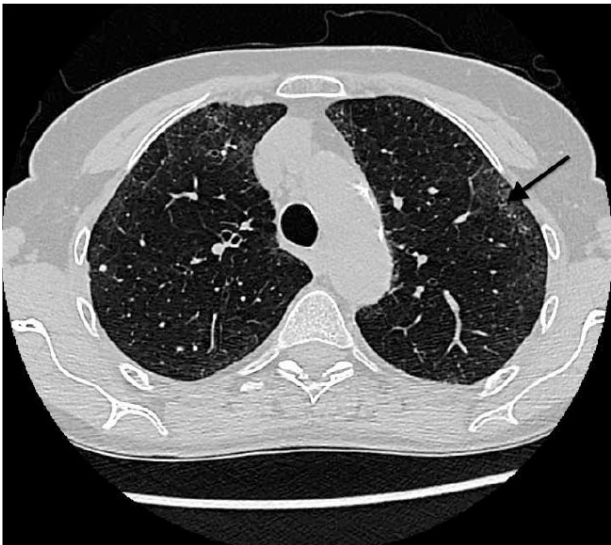
**Figure 1.** Ground-glass opacities. Slight reduction in lung translucency, with visible vascular and bronchial margins, although less sharp than in properly airborne lung tissue.

**Rycina 1.** Zagęszczenia typu matowej szyby. Niewielkie zmniejszenie przejrzystości płuc, na tle którego zarysy naczyń i oskrzeli są widoczne, choć mniej ostre niż w prawidłowo powietrznej tkance płucnej.



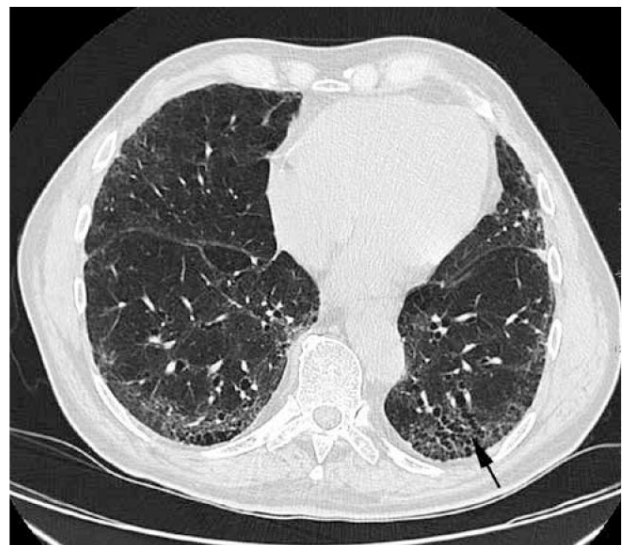
**Figure 3.** Subpleural lines. Subpleural lines run within a short distance from the pleura, parallel to it.

**Rycina 3.** Linie podopłucnowe. Linie podopłucnowe przebiegające w niewielkiej odległości od opłucnej, równoległe do niej.



**Figure 2.** Reticular fibrous opacities. Linear, running in different directions and intersecting opacities produce an appearance resembling a net.

**Rycina 2.** Zagęszczenia włókniste siateczkowate. Linijne, przebiegające w różnych kierunkach i krzyżujące się zaciemnienia, powodujące powstanie siateczki.

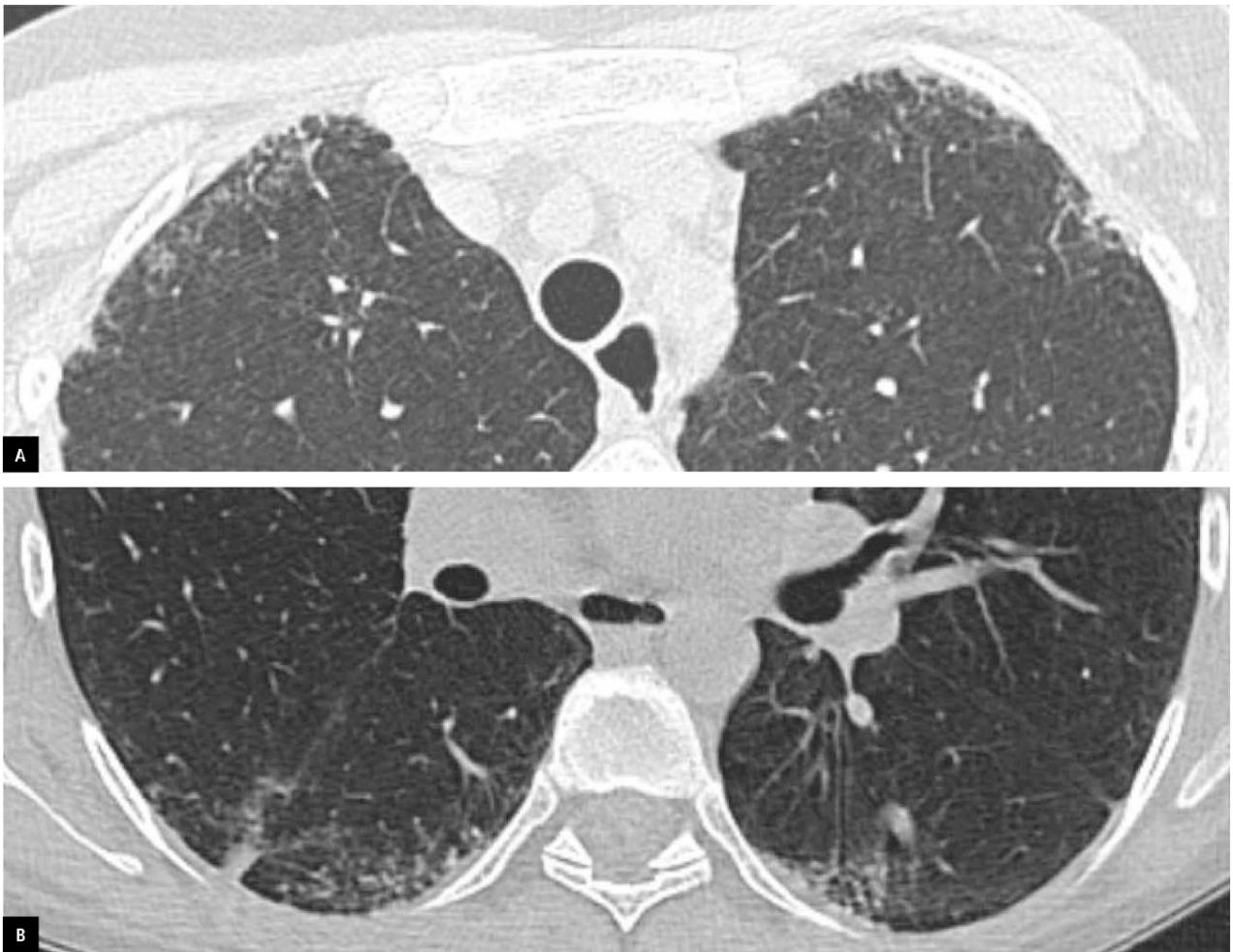


**Figure 4.** Honeycombing sign. Clustered cystic airspaces 3-10 mm in diameter, with walls up to 1-3 mm thick, and honeycomb structure.

**Rycina 4.** Objaw plastra miodu. Grupa drobnych torbieli średnicy 3-10 mm, ze ścianami grubości do 1-3 mm i o strukturze zbliżonej do plastra miodu.

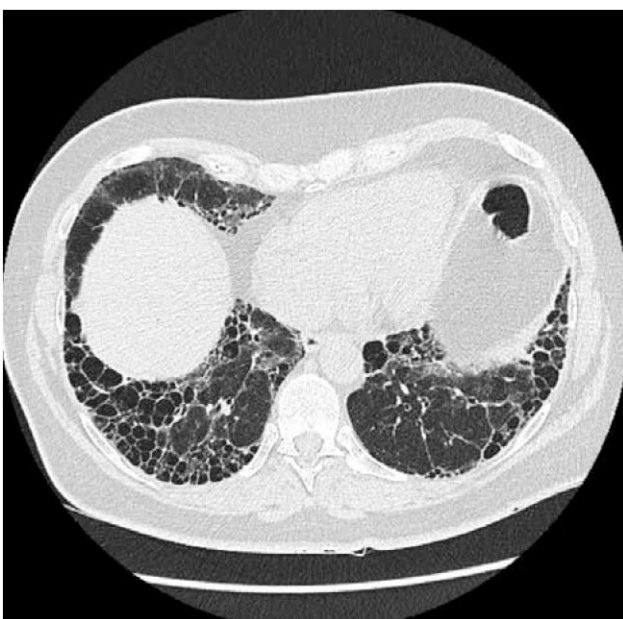
Generally, it is believed that radiological symptoms of ILD found in HRCT scans in patients with SS and RA are non-specific. They include ground-glass opacities,

reticular opacities, septal lines, subpleural lines, honeycombing, subpleural cysts, disturbed lung architecture and traction bronchiectasis [10].



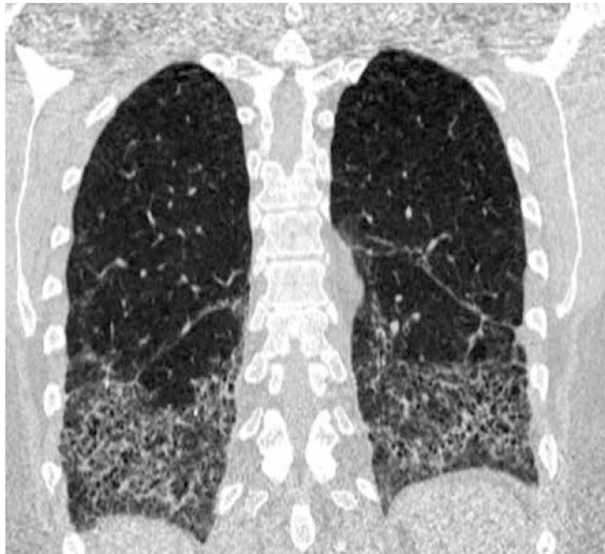
**Figure 5.** Four corners sign. Subpleural focal fibrosis in 3<sup>rd</sup> (A) and 6<sup>th</sup> lung segments (B).

**Rycina 5.** Objaw czterech rogów. Nasilenie włóknienia podopłucnowo w segmentach 3. (A) i 6. płuc (B).



**Figure 6.** Exuberant honeycombing sign. Extensive honeycomb-like cyst formation comprising at least 70% of the fibrotic parts of lungs.

**Rycina 6.** Objaw bujnego plastra miodu. Znaczne nasilenie zmian o charakterze plastra miodu z rozległym tworzeniem torbieli stanowiących co najmniej 70% zmian włóknistych płuca.



**Figure 7.** Straight-edge sign. Acute demarcation of lung fibrosis in the cranio-caudal plane on coronal images, without substantial extension along lateral margins of the lungs.

**Rycina 7.** Objaw prostej krawędzi. Ostre rozgraniczenie włóknienia płuc w płaszczyźnie kraniokaudalnej w obrazach czołowych, bez znacznego przedłużenia wzdłuż bocznych brzegów płuc.

In 2018, the first studies demonstrating the differences between the manifestations of connective tissue disease-associated interstitial lung disease (CTD-ILD) and those of idiopathic pulmonary fibrosis (IPF) became available. These studies introduced the following radiological terms: four-corners sign (FCS) [11], exuberant honeycombing sign (EHS), and straight-edge sign (SES) [12]. FCS consists in increased subpleural fibrosis in anterolateral parts of both upper pulmonary lobes, at the level of the aortic arch, i.e. in the 3<sup>rd</sup> lung segments, and subpleurally, in the upper posterior parts of both lower lobes, slightly below the tracheal bifurcation, in 6<sup>th</sup> lung segments (Fig. 5) [11]. EHS is defined as extensive honeycomb-like cyst formation involving at least 70% of the fibrotic part of the lungs (Fig. 6). SES is diagnosed when the fibrotic lesions are located at the base of both lungs, with sharp demarcation of lung fibrosis in the cranio-caudal plane in coronal images, without substantial extension along the lateral margins of the lungs. 7) [12, 13].

### Aim of the study

The aim of the study is to compare retrospectively the frequency of radiological symptoms of pulmonary fibrosis (EHS, SES and FCS) in thoracic HRCT scans in patients with SS-ILD and RA-ILD, considering the degree of lung fibrosis based on the Warrick score.

### Material and methods

#### Patients and lung HRCT examination

The study involved 77 patients with SS-ILD, and 96 patients with RA-ILD, hospitalised at the Department of Internal Diseases and Rheumatology, Central Clinical Hospital of the Ministry of National Defence, Military Institute of Medicine in Warsaw in the years 2006 – 2019. The group characteristics are presented in Table 2. The inclusion criterion was a lung HRCT scan available for assessment. Excluded from the study were patients with overlap syndromes between other connective tissue disorders and ILD, and with malignant neoplasms. Lung HRCT tests were performed using a 16-row GE LightSpeed scanner from 2005, and a 64-row GE Discovery CT750 HD scanner from 2012, at the Computed Tomography Laboratory of the Institute of Medical Radiology, Central Clinical Hospital of the Ministry of National Defence, Military Institute of Medicine in Warsaw. The protocols used involved sequential scanning using 1.2 mm-thick slices at 10 mm intervals, or the spiral technique with 2.5 mm-thick slices, and lung reconstruction in 1.25 mm layers. Only the first lung HRCT was assessed; subsequent scans performed in the same patient, regardless of the results and progression of fibrosis, were not considered. All HRCT scans were analysed by the same radiologist. The degree of ILD was assessed using the Warrick scale, where scores <8 were classified as mild ILD, score of 8–15 were interpreted as moderate ILD, and those >15 as severe ILD, similarly to the study by Fessi et al. [14]. The following parameters were also assessed in every HRCT scan: (1) presence of FCS, EHS and SES, (2) oesophageal diameter below the tracheal bifurcation in both groups of patients (oesophageal dilation was defined as >10 mm in coronal view), (3) presence of bronchiectasis (defined as: lack of bronchial narrowing towards the peripheral margin of the lung along >20 mm, or bronchus visible at less than 10 mm from the pleura, or bronchus visibly wider than its artery [15]), (4) the extent of bronchiectasis, classified as one of 3 degrees (1 - bronchiectasis present in 1-3 lung segments, 2 - in 4-9 lung segments, 3 - in > 9 lung segments).

Table 2. Study group characteristics

Tabela 2. Charakterystyka grup badanych

	Age [years] mean (SD)	Males n (%)	Severity of fibrosis according to Warwick score		
			Mi-ILD n (%)	Mo-ILD n (%)	S-ILD n (%)
SS-ILD (n=77)	56 (±11.66)	11 (14.28)	12 (15.58)	42 (54.55)	23 (29.87)
RA-ILD (n = 96)	64 (±9.55)	29 (30.20)	50 (52.08)	29 (30.21)	17 (17.71)
P	p = 0.00021	p = 0.014	p = 4 x 10 <sup>-6</sup>		

Mi-ILD - mild pulmonary fibrosis Mo-ILD - moderate pulmonary fibrosis, RA-ILD - interstitial lung disease associated with rheumatoid arthritis, S-ILD - severe pulmonary fibrosis, SS-ILD - interstitial lung disease associated with systemic sclerosis

Table 3. Group fibrosis score in Warrick scale

Tabela 3. Nasilenie włóknienia w skali Warricka w poszczególnych grupach

	Whole group Mean (SD)	Mi-ILD Mean (SD)	Mo-ILD Mean (SD)	S-ILD Mean (SD)
SS-ILD	13.33 (±6.23)	5.91 (±1.24)	10.90 (±2.22)	21.65 (±3.28)
RA-ILD	9.80 (±6.56)	5.26 (±1.38)	10.34 (±2.15)	22.23 (±3.54)
P	p = 0.0004	p = 0.14	p = 0.30	p = 0.59

RA-ILD - interstitial lung disease associated with rheumatoid arthritis, Mi-ILD - mild pulmonary fibrosis, Mo-ILD - moderate pulmonary fibrosis, S-ILD - severe pulmonary fibrosis, SS-ILD - interstitial lung disease associated with systemic sclerosis

Table 4. Prevalence of exuberant honeycombing sign (EHS), straight-edge sign (SES) and four-corners sign (FCS)

Tabela 4. Występowanie objawów bujnego plastra miodu (EHS), prostej krawędzi (SES) i czterech rogów (FCS)

		SS-ILD	RA-ILD	P
EHS	Mi-ILD, n (%)	0 (0)	0 (0)	n/a
	Mo-ILD, n (%)	0 (0)	0 (0)	n/a
	S-ILD, n (%)	5 (21.74)	5 (29.41)	p = 0.58
	<b>Sum, n (%)</b>	<b>5 (6.49)</b>	<b>5 (5.20)</b>	<b>p = 0.72</b>
SES	Mi-ILD, n (%)	0 (0)	0 (0)	n/a
	Mo-ILD, n (%)	1 (2.38)	0 (0)	P = 0.4
	S-ILD, n (%)	2 (8.70)	0 (0)	P = 0.21
	<b>Sum, n (%)</b>	<b>3 (3.89)</b>	<b>0 (0)</b>	<b>p = 0.051</b>
FCS	Mi-ILD, n (%)	0 (0)	0 (0)	n/a
	Mo-ILD, n (%)	5 (11.90)	0 (0)	p = 0.054
	S-ILD, n (%)	4 (17.39)	1 (6.25)	P = 0.31
	<b>Sum, n (%)</b>	<b>9 (11.68)</b>	<b>1 (1.04)</b>	<b>p = 0.003</b>
FCS/SES/EHS	Mi-ILD, n (%)	0 (0)	0 (0)	n/a
	Mo-ILD, n (%)	5 (11.90)	0 (0)	p = 0.054
	S-ILD, n (%)	7 (30.43)	6 (35.29)	P = 0.75
	<b>Sum, n (%)</b>	<b>12 (15.58)</b>	<b>6 (6.25)</b>	<b>p = 0.046</b>

Mi-ILD - mild pulmonary fibrosis Mo-ILD - moderate pulmonary fibrosis, RA-ILD - interstitial lung disease associated with rheumatoid arthritis, S-ILD - severe pulmonary fibrosis, SS-ILD - interstitial lung disease associated with systemic sclerosis

**Table 5. Bronchiectases**  
**Tabela 5. Rozstrzenie oskrzeli**

Degree of bronchiectases	SS-ILD			RA-ILD		
	Mi-ILD n (%)	Mo-ILD n (%)	S-ILD n (%)	Mi-ILD n (%)	Mo-ILD n (%)	S-ILD n (%)
I	3 (25)	7 (16.67)	9 (39.13)	9 (18)	6 (20.69)	3 (17.65)
II	0 (0)	18 (42.86)	12 (52.17)	0 (0)	2 (6.90)	2 (11.76)
III	0 (0)	1 (2.38)	1 (4.35)	0 (0)	0 (0)	0 (0)
<b>Total</b>	<b>51 (66.23)</b>			<b>22 (22.91)</b>		
	<b>p &lt; 1 x 10<sup>-6</sup></b>					

1<sup>st</sup> degree bronchiectasis – changes in 1–3 bronchopulmonary segments

2<sup>nd</sup> degree bronchiectasis – changes in 4–9 bronchopulmonary segments

3<sup>rd</sup> degree bronchiectasis – lesions located in >9 bronchopulmonary segments

Mi-ILD - mild pulmonary fibrosis Mo-ILD - moderate pulmonary fibrosis, RA-ILD - interstitial lung disease associated with rheumatoid arthritis, S-ILD - severe pulmonary fibrosis, SS-ILD - interstitial lung disease associated with systemic sclerosis

## Statistical methods

The statistical analysis was conducted using the Statistica 12 software (StatSoft Inc). The results were presented as a mean and standard deviation (SD) for continuous variables, and the number (n) and percentage (%) for categorical variables. To compare the means from two groups, t-Student's test was used. Categorical variables were compared using the chi-square test. The assumed statistical significance level was  $p < 0.05$ .

## Results

Significantly more advanced lung fibrosis based on the Warrick score was found in patients with SS-ILD compared to those with RA-ILD (13.33 ±6.23 vs. 9.80 ±6.56,  $p = 0.0004$ ) (Tab. 3). The distribution of patients with various degrees of fibrosis also differed significantly between the SS-ILD and RA-ILD groups ( $p = 4 \times 10^{-6}$ ); while in the RA-ILD group most patients had mild ILD (52.08%), and severe ILD was observed only in 17.71%, most SS-ILD patients demonstrated at least moderate ILD (84.42%) (Tab. 2). The frequency of FCS, and the combined frequency of EHS, SES and FCS were significantly higher in the SS-ILD group compared to RA-ILD group: 9 (11.68%) vs. 1 (1.04%),  $p = 0.003$ , and 12 (15.58%) vs. 6 (6.25%),  $p = 0.046$ , respectively (Tab. 4). The analysis of individual subgroups according to the degree of ILD demonstrated that the differences in incidence of any of the symptoms: EHS, SES and FCS in RA and SS patients are practically limited to moderate ILD - the symptoms were observed in 5 patients with moderate SS-ILD, but were not found in RA patients with moderate ILD (Tab. 4).

Bronchiectases were observed in 51 patients with SS-ILD (66.23%), and in 22 patients with RA-ILD (22.91%); the difference was significant ( $p < 1 \times 10^{-6}$ ). Distribution of changes in individual patient subgroups is presented in detail in Table 5.

Oesophageal dilatation of >10 mm was observed in 53 patients (68.83%) with SS-ILD and in 14 patients (14.58%) with RA-ILD ( $p < 1 \times 10^{-6}$ ). The mean diameter of dilated oesophagus was similar in both groups: 16 mm (±4.11) in SS-ILD patients vs. 15 mm (±4.24) in RA-ILD patients.

## Discussion

Interstitial lung disease in systemic sclerosis and rheumatoid arthritis rarely require open pulmonary biopsy (OPB). At present, HRCT is the basic diagnostic tool (its results are closely correlated with the OPB results), and OPB is used only in clinically or radiologically atypical cases [16]. In systemic connective tissue diseases all types of interstitial disease can be found, but the most common ones include non-specific interstitial pneumonia (NSIP) and usual interstitial pneumonia (UIP). It is worth noting that in RA UIP is more frequently observed, whereas in sclerosis and other systemic connective tissue disorders, the dominant form is NSIP. Regardless of the type, in every case the manifestations may include ground-glass opacities, together with reticular lesions and bronchiectasis, contributing to the process of fibrosis [17]. Isolated ground-glass opacities, without reticular or other fibrotic lesions, are most frequently observed in NSIP. They also exclude UIP [17]. It should also be emphasised that prognosis in isolate ground-glass opacities is favourable; Walsh et al. demonstrated that their presence does not correlate with increased mortality in CTD-ILD

patients [18]. The severity and extent of pulmonary fibrosis, observed as reticular lesions, septal and subpleural lines, generally referred to as reticular pattern, and honeycombing, affect mortality in systemic sclerosis. A study by Goh et al. revealed that the extent of fibrotic lesions of over 20% is associated with increased mortality [19]. HRCT allows to assess precisely the extent and severity of fibrosis, but is usually does not allow the determination of the aetiology of ILD, i.e. to differentiate between IPF and CTD-ILD. Radiological symptoms specific for individual types of ILD are yet to be identified. Recent studies suggest that EHS and SES could serve as specific markers. In a study by Chung et al. these signs were significantly more often observed in CTD-ILD than in IPF in the form of UIP (22.2 – 25.4% vs. 6 – 12.8%,  $p = 0.028 < 0.001$ ) [12, 20]. In the presented study, EHS was observed in 6.49% of patients with SS, and in 5.2% of RA patients. SES was found exclusively in patients with SS (3.89%). The frequency of these symptoms was considerably lower than in the study by Chung et al.

However, there are significant differences between the two studies. First, our study analysed homogeneous groups (SS group and RA group), whereas in Chung's study the CTD-ILD group comprised different diseases, and SS and RA accounted for approximately 60% of the entire study group. Secondly, Chung et al. did not assess the severity of fibrosis, and the study suggests that SES and EHS are observed almost exclusively in patients with severe fibrosis. The limited incidence of the above symptoms may result from a relatively low intensity of fibrosis (only 29.87% of patients with SS-ILD and 17.71% of patients with RA-ILD had severe ILD). In this context, it would be interesting to establish if in Chung's study the severity of fibrosis in IPF and CTD-ILD patients was comparable, and if the difference observed between these groups was not (at least partially) due to different degrees of lung disease. Another radiological symptom, FCS, was presented by Walkoff et al. As specific for SS-ILD; this sign was not observed in IPF patients, whereas in the SS-ILD group it was found in 16.43% of patients [11]. In our study the frequency of FCS in SS was similar to that in the study by Walkoff et al. (11.68%). Importantly, FCS was observed in only one patient with RA, which seems to confirm the sign's specificity for SS.

The presented study indicates that other analysed symptoms, such as bronchiectasis and oesophageal dilatation, may also demonstrate potential usefulness in differentiating between SS-ILD and RA-ILD. Both are found considerably more often in SS-ILD (66.23% and 68.83%, respectively) than in RA-ILD (22.91% and 14.58%, respectively). The presented study has a number of limitations. First, the number of subjects was relatively small. Second, some of the HRCT scans of the lungs were performed using the sequential method; a smaller

number of thoracic layers results in inferior quality of the reconstructed images, so for the radiologist the assessment of a sequential study is more difficult than in the case of scans obtained using the spiral technique. Thirdly, the assessment of the severity of fibrosis is subjective, to a certain degree; although considering the fact that all scans were analysed by the same radiologist, and Warrick score was used for grading of fibrosis, it should not affect significantly the presented results, especially regarding the differences between groups RA-ILD and SS-ILD.

## Conclusions

SES, EHS and FCS are rarely observed in patients with SS-ILD and RA-ILD, in particular if the disease is not severe. Therefore, it appears that they will be of limited practical use in differentiation between ILD types. However, development of a score including a few radiological symptoms, e.g. presence of FCS, bronchiectases, and oesophageal dilatation, as well as assessment of the usefulness of such a parameter in differentiating between various types of ILD is an interesting idea.

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# Sudden resuscitation in COVID patient - description of incident

Nagła reanimacja u chorego na COVID - opis zdarzenia

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**Abstract.** The paper describes a situation where, as a result of a coincidence, cardiopulmonary resuscitation of a COVID-19 patient was performed by a medical team, two physicians of which were not fully protected with personal protective equipment. The team's action proved to be effective and, despite the high risk of infection for the two not fully protected physicians, they were not infected with SARS-CoV-2.

**Keywords:** COVID-19, protective clothing, resuscitation

**Streszczenie.** W artykule opisano sytuację, w której w wyniku zbiegu okoliczności resuscytacji krążeniowo-oddechowej chorego na COVID-19 dokonywał zespół medyczny, w którym dwaj lekarze nie byli w pełni zabezpieczeni w środki ochrony osobistej. Działania zespołu okazały się skuteczne i mimo dużego ryzyka w ich trakcie nie doszło do zakażenia SARS-CoV-2 tych dwóch nie w pełni zabezpieczonych lekarzy.

**Słowa kluczowe:** COVID-19, odzież ochronna, resuscytacja

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## Introduction

Medical teams caring for patients with COVID-19 (coronavirus disease 2019) sometimes need to cope with emergencies in which the risk of exposure to infection cannot be eliminated. The presented case illustrates such a situation.

## Case report

On 1 April 2020, a 64-year-old male was brought by the medical rescue team to the Hospital Emergency Department (HED) of the Military Institute of Medicine due to dyspnoea, pain in the thorax, and fever. The patient had a history of arterial hypertension, type 2 diabetes, bronchial asthma (aspirin triad), ischaemic heart disease, and status post coronary angioplasty in March 2020. The thoracic X-ray performed on admission revealed

extensive interstitial opacities, merging into parenchymal opacities in the entire right lung, and peribronchial opacities in the lower pole of the left lung. Additional tests demonstrated increased inflammation markers: procalcitonin – 0.11 ng/ml (normal range: <0.046 ng/ml), CRP – 16.2 (normal range: 0.0-0.8 mg/dl) and satO<sub>2</sub> – 85% (normal range: 94-99%); arterial gasometry revealed pH – 7.48 (normal range: 7.35-7.42), pCO<sub>2</sub> – 23.3 mm Hg (normal range: 32-48 mm Hg), pO<sub>2</sub> – 51 mm Hg (normal range: 80-103 mm Hg).

During the stay at the HED, the patient received passive oxygen therapy and symptomatic treatment. The results of genetic testing for SARS-CoV-2 infection were positive, and at 2 a.m. the patient was transferred to the Department of Infectious Diseases and Allergology.

On admission to the department, a nurse (fully protected and wearing Tyvek suit) assessed the patient's

status as “severe”: he was unresponsive and foaming at the mouth, but still breathing spontaneously.

As the patient was being moved from a gurney to a bed, in the patient room, he experienced cardiorespiratory arrest. Two physicians on duty were called. Due to the urgency of the situation, they did not wear full protective clothing, only spunbond disposable gowns, surgical masks and disposable gloves.

Resuscitation was carried out following the European Resuscitation Council guidelines. Chest compressions and ventilation using a bag valve mask with oxygen were performed, and pharmacotherapy was applied. Following two defibrillations (ventricular fibrillation demonstrated in ECG), haemodynamically normal heart function was restored. The patient was transferred to the Intensive Care Unit dedicated to COVID patients, where he received multidirectional therapy involving ventilation, pharmacological support of the cardiovascular system with noradrenalin, treatment with broad spectrum antibiotics, glycaemic control, hydration, diuretic stimulation and analgesedation. Despite the maximal use of the ventilator with 100% oxygen and placing the patient in prone position, proper oxygenation of the organism could not be achieved. The patient's condition worsened, the cardiovascular dysfunction increased, and the patient died.

The two doctors (male, aged 47 and 63 years) who were directly involved in the resuscitation without full protective clothing were sent to a 7-day quarantine. In that period they did not demonstrate any signs indicative of COVID-19. Following the recommendations of an epidemiologist, pharyngeal swabs for genetic material of SARS-CoV-2 were collected from the physicians before their return to work. The results of Real Time-PCR for 3 SARS-CoV-2 genes: *RdRp*, *E* and *N* were negative in both cases. The test was repeated after a week; as no genetic material of SARS-CoV-2 was found, the physicians could return to work. After 14 days from the episode, an additional test for anti-SARS-CoV-2 IgG and IgM antibodies was performed (Qualitative One Step Test for Novel Coronavirus [2019-nCoV] IgM/IgG antibody [Colloidal Gold], manufactured by Getein Biotech, Inc. [China]). The test results were negative.

## Discussion

The first case of SARS-CoV-2 infection in Poland was detected on 04/03/2020 in a hospital in Zielona Góra. The patient was a 66-year-old man who arrived in Poland from Germany. However, the first preventive measures were introduced on 25 January 2020, at the Warsaw Chopin Airport. They applied to passengers coming to our country from the People's Republic of China, the main focus of pandemic at that time.

Following the recommendations on the management of SARS-CoV-2 infections presented by the Polish Association of Epidemiologists and Infectiologists, and further guidelines of the National Consultant for Epidemiological Nursing (from 17/04/2020), personal protective equipment of medical personnel should include: water-resistant coveralls or gowns with long sleeves, goggles or visors, FFP-2 or FFP-3 masks, gloves (preferably nitrile), hats and shoe covers (if water-resistant gowns are used) [1-3]. Recommendations regarding personal protection for Chinese medical personnel go further [4].

Due to the coincidence and urgency of the situation, the protective clothing of the physicians was not in compliance with the recommendations valid at that time or at present.

From the beginning the resuscitation was conducted following the recommendations regarding resuscitation of patients with SARS-CoV-2 infection / COVID-19 presented in the British statement, published in Polish on the [www.mp.pl](http://www.mp.pl) website [5]. It included ventilation with the use of Ambu device, which could have contributed to a positive outcome for the doctors.

The main threat for personnel is due to the possibility of generating aerosols during the resuscitation procedure, and the associated risk of infection. However, the results of the analysis conducted by Couper et al. demonstrate that there is no sufficient evidence to confirm (or deny) that chest compressions or defibrillation are associated with the generation of aerosols [6], although the opinion of the World Health Association [7] and American Heart Association is different [8]. In the presented case the patient was intubated by an anaesthesiologist: early intubation being considered to limit aerosol generation [9].

Much, although not everything, is known about the mechanism of infection with SARS-CoV-2 [4, 10]. It has been established that the principal route of virus dissemination is through droplet spread, other routes being of minor importance. Certain data and epidemiological indexes are available, but new information comes to light every day, and the parameters need to be corrected. However, at present, the data illustrating the development of SARS-CoV-2 pandemic indicate that the infectiousness of the virus is high, and considerably greater than that of SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) viruses, but the mortality rates associated with infection are significantly lower [11, 12]. Nevertheless, until April 2020, considerably more people died due to SARS-CoV-2 infections than during the epidemics of SARS and MERS combined. Despite lower mortality rates in the course of COVID-19 compared to SARS and MERS, the large number of deaths in COVID-19 patients is due to the higher infectiousness of the virus.

Therefore, compliance with the general principles of personal protection against microorganisms transmitted by droplet spread plays crucial role in the fight with SARS-CoV-2 pandemic. It is particularly important for medical personnel taking care of COVID-19 patients, as the risk of infection is very high.

The presented case demonstrates that even incomplete protection during close contact may suffice to prevent infection of the personnel. This case did not meet all the criteria of close contact between doctor and patient, i.e. remaining in direct contact with the person infected with SARS-CoV-2 at a distance of less than 2 metres for over 15 minutes, without any protective clothing.

Currently, the national requirements regarding personal protection equipment for the medical personnel working with COVID-19 patients are much stricter, and if applied properly, they reduce the risk of infection to unforeseeable coincidences.

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# Haematological syndrome of acute radiation syndrome in the 21st century

Zespół hematologiczny ostrej choroby popromiennej w XXI wieku

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**Abstract.** In contrast to the situation where injury to gastrointestinal or nervous system dominates, hematologic syndrome of acute radiation syndrome is the only organ injury syndrome which an irradiated person can survive. Up to 3.5 Gy dose, a victim may survive without significant medical assistance, while with such assistance it is possible to survive up to approx. 5-6 Gy irradiation without bone marrow transplantation. Above 6 Gy and up to approx. 10-12 Gy, survival is possible only with bone marrow transplantation from a non-irradiated person. With irradiation doses exceeding the latter values, injuries to other organ systems dominate. The actual possibility of providing medical care would strictly depend on the number of victims. With decreasing numbers of irradiated persons the possibility of providing full and advanced care increases, while increasing numbers would gradually reduce such a possibility, all the more because in such a case the rescue services, including health care providers, would be affected as well. With a greater number of irradiated, survival of those who could be saved would depend on the organizational skills in triage, evacuation and only finally on the quality of medical assistance.

**Keywords:** nuclear bomb, pancytopenia, radiation accident

**Streszczenie.** W odróżnieniu od sytuacji, w których dominuje uszkodzenie układu pokarmowego lub nerwowego, zespół hematologiczny ostrej choroby popromiennej to jedyny zespół uszkodzeń narządowych spowodowanych przez promieniowanie jonizujące, który napromieniony może przeżyć. Do dawki 3,5 Gy porażony może przeżyć bez istotnej pomocy medycznej, a w przypadku uzyskania pomocy medycznej, ale bez przeszczepienia szpiku, możliwe jest przeżycie do dawki około 5-6 Gy. Powyżej 6 Gy do dawki około 10-12 Gy możliwe jest przeżycie pod warunkiem przeszczepienia szpiku od osoby nienapromienionej. Powyżej tej ostatniej dawki dominują uszkodzenia innych układów narządowych. Rzeczywiste możliwości udzielenia pomocy medycznej będą ściśle uzależnione od liczb osób napromienionych. Im napromienionych będzie mniej, tym pełniejszej i bardziej zaawansowanej pomocy będzie można im udzielić, a zwiększająca się ich liczba będzie stopniowo redukowała te możliwości, zwłaszcza że będą temu towarzyszyć również straty dotyczące służb ratunkowych, w tym służby zdrowia. Przy większej liczbie porażonych o przeżyciu tych, których można uratować, zadecyduje sprawność organizacyjna w segregacji, ewakuacji i dopiero ostatecznie jakość pomocy medycznej.

**Słowa kluczowe:** bomba jądrowa, wypadkowe napromienienie, pancytopenia

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## Introduction

The incidence of radiation syndrome, which appeared to be a great threat to humanity after the nuclear explosions in Hiroshima and Nagasaki, fortunately is limited to very

few cases due to problems in nuclear power stations, or irradiation during the theft of sources of radiation [1, 2]. However, the number of countries with nuclear weapons is increasing, as well as the number of nuclear power

stations; we could also imagine terrorist attacks with the use of sources of radiation, including so-called dirty bombs [3]. Therefore, despite other more pressing threats to the health of the population, the revision and updating of the information regarding this disease is justified.

In Poland no publications on the haematological syndrome of acute radiation syndrome (HS-ARS) have been published in a long time. Although the understanding of the biological aspects of the condition have not changed, new management options and procedures have become available.

Haematological syndrome of acute radiation syndrome occurs when the victim receives ionising radiation at a dose over 1 Gy, but lower than 10 Gy, over the entire body or its large area [4]. It is the only radiation syndrome (except for the cutaneous radiation syndrome [5]) that the irradiated patient can survive [6]. It also occurs as a result of higher radiation doses, but in such cases damage to other organs (gastrointestinal and nervous systems) dominates, resulting in the death of the patient prior to the development of a fully symptomatic haematological syndrome. Similarly, cutaneous radiation syndrome of varying intensity is concurrent with the other syndromes, but does not cause death on its own. For irradiation at doses causing a dominant haematological syndrome, the symptoms are limited to a transient erythematous rash that does not require individual management.

HS-ARS can develop in the case of accidental irradiation of the entire body, or as a result of nuclear weapons, especially a neutron bomb [1, 2]. When an atomic or hydrogen bomb is used, patients also suffer from contamination with radioactive isotopes, but the dominant problems include mechanical (due to the blast wave) and thermal injuries. The latter are very difficult to treat and usually determine the patient's survival, especially in the situation of mass losses. It is not only due to the effects of burns, but also because the development of HS-ARS is delayed by a few days, so the victim may already die due to other causes. Other problems are generated by dirty bombs in which a conventional explosive is combined with radioactive isotope, and causes mainly environmental contamination. This article presents isolated damage due to irradiation of the entire body.

### Pathophysiology of HS-ARS

HS-ARS may be caused by any type of ionising radiation, both electromagnetic, and molecular, and its symptoms (more precisely, their intensity) depend on the received dose and whether the exposure of various body parts was equal, or some of them were protected. The probability of

equal exposure is higher in the case of bomb explosion, while in the case of an accident involving radiation, some body parts could be protected during the exposition, although there are no rules, as it all depends on the random position of the victim at the time of the exposition. To simplify the demonstration, let's assume that the exposure is equal, and the source of radiation is completely external relative to the irradiated person, and the radioactive isotope was not absorbed.

The effects of such irradiation will depend primarily on the dose. It is believed that doses above 5 greys (Gy) result in myeloablation [6], so endogenous restoration of haematopoiesis should not be expected. Doses below 5 Gy demonstrate non-myeloablative effects, and endogenous haematopoiesis may occur with efficiency inversely proportionate to the received radiation dose. The effects will be limited to permanent (myeloablative doses) or transient (non-myeloablative doses) pancytopenia, i.e. simultaneous deficits of neutrophils, blood platelets and erythrocytes (Fig. 1 – 2). Although the mechanism of this pancytopenia is central, i.e. the precursor cells common for these mature forms are damaged, the actual deficit of individual blood cells will be additionally affected by their circulation time in the peripheral blood. It is the shortest for neutrophils (a few hours), medium for platelets (7 – 10 days), and the longest for erythrocytes (up to 120 days). It means that neutrophil deficit is the easiest one to generate, the platelet deficit is more difficult, and the erythrocyte deficit is the hardest to produce. It should be emphasised that all these mature cells are highly resistant to radiation. Radiation primarily damages two types of cells: proliferative progenitor cells, common and separate for the individual types of final cells, and haematopoietic stem cells. Proliferating cells require approximately 10 days to produce mature cells, while stem cells require approximately 30 days. Therefore, following a non-myeloablative radiation dose the curve of decrease and restoration of neutrophils in the peripheral blood is two-phase (Fig. 1 – 2), with the first decrease after approximately 10 days after irradiation, and another one after approximately 30 days. Radiation in non-myeloablative doses does not destroy irreversibly the haematopoietic stem cells, so they can reproduce proliferative cells, and, eventually, the final cells. At myeloablative doses, the radiation destroys irreversibly haematopoietic stem cells, which means that the irradiated patient can survive only after an allogeneic transplant of these cells. Based on the observations after the explosions of nuclear bombs in Hiroshima and Nagasaki, and the Chernobyl disaster, it is believed that the dose resulting in the death of 50% of people (LD50) without treatment is 3.5 Gy.



**Figure 1.** Kinetics of changes in peripheral blood parameters following total body irradiation with doses of 1 and 3 Gy (figure from REMM [Radiation Emergency Medical Management] site, provided by the author, Dr. William Dickerson [Armed Forces Radiobiology Research Institute, Bethesda, MD])

**Rycina 1.** Kinetyka zmian parametrów krwi obwodowej po napromienieniu całego ciała dawkami 1 i 3 Gy (rycina ze strony REMM [Radiation Emergency Medical Management], udostępniona przez jej autora, dr. Williama Dickersona z Armed Forces Radiobiology Research Institute, Bethesda)

HS-ARS follows an established course. It starts with the prodromal phase, characterised by initial symptoms, lasting 1–2 days, followed by asymptomatic latent phase, lasting a few to several days. Then, the full disease manifestation develops (its intensity depends on the absorbed dose), with peak mortality at approximately 60 days. In survivors this can be followed by the regeneration phase and recovery (limited by the effects of damage to other organs). However, it depends greatly by the absorbed radiation dose, and with lower doses regeneration takes place earlier, and reduction in peripheral blood cell counts does not reach life-threatening levels.

### Management of irradiated patients

In Poland, the risk of war involving nuclear weapons is small (although the officers of the Polish army in the author's generation practised theoretical military operations with the use of such weapons supplied by our main ally at that time). No radiation accidents can take place in our nuclear power stations, as we do not have any. However, such nuclear power plants are located in the neighbouring countries, and the effects of their breakdowns can reach Poland. The risk is very low, similar to that of a terrorist attack. The recommendations below apply to a practically hypothetical situation.



**Figure 2.** Kinetics of changes of white blood cell count in persons irradiated during Chernobyl accident (figure from REMM [Radiation Emergency Medical Management] site, provided by the author, Dr. William Dickerson [Armed Forces Radiobiology Research Institute, Bethesda, MD] and based on figure 6 from: Vorobiev Al. *Stem Cells*, 1997; 15 [suppl 2]: 269-274

**Rycina 2.** Kinetyka zmian bezwzględnej liczby krwinek białych u napromienionych podczas wypadku w Czarnobylu (rycina ze strony REMM [Radiation Emergency Medical Management], udostępniona przez jej autora, dr. Williama Dickersona [Armed Forces Radiobiology Research Institute, Bethesda, MD] i oparta na rycinie nr 6 z pracy: Vorobiev Al. *Stem Cells*, 1997; 15 [suppl 2]: 269-274)

Management will be largely determined by the number of casualties. If a few, several, or even a few hundred people are affected, Polish services will be able to provide assistance using of all the achievements of modern medicine (both diagnostic, and therapeutic), especially considering the fact that help from abroad can be expected, and most victims will receive relatively low radiation doses. Moreover, with a relatively small number of victims, they can be examined in more detail than is required to provide the necessary assistance, which will allow to collect data for the future management in case of similar events. However, if the number of irradiated patients is a few thousand or more, all the principles of patient segregation will have to be implemented, according to the classical rules of military medicine, referred to as “triage” [4, 8, 9]. These principles should also be applied when the number of victims is smaller, especially if there is any risk that the available services might not be able to contain the situation as planned.

The victims who quickly (within minutes or a few hours) develop severe consciousness disorders cannot be saved (these are the symptoms of neurological syndrome), as the radiation dose they received significantly exceeded 10 Gy. These patients are marked with black, and they must be provided with the conditions for a dignified death at the site, including symptomatic treatment of vomiting and diarrhoea. Victims with minor consciousness disorders, but with vomiting and diarrhoea occurring within a few hours after the irradiation should be evacuated as first to specialist centres (colour red), as they received approximately 10 Gy of radiation, and can be saved provided they receive bone marrow transplantation. Victims without consciousness disorders, persistent vomiting (possibly with nausea, but only a few hours after the exposure) or diarrhoea should be evacuated next (colour yellow). In these patients endogenous regeneration will be possible, provided no complications develop.

People without disease symptoms (colour green), i.e. those who received less than 1 – 2 Gy, are evacuated last; they require only outpatient monitoring. As fully capable of co-operation, and not requiring medical assistance, these individuals should be removed from the site as quickly as possible, so that they do not disturb the work of emergency services. It can be expected that these people will try to escape from the site of the event by any means possible. In this case, the police and security services play a crucial role in managing the movement of people.

Haematological centres, preferably those with bone marrow transplantation centres offering allogeneic transplants, are the proper institutions for potential medical care over irradiated patients. Such centres have practical experience in taking care of patients after whole-body irradiation, as this is a standard procedure of preparing patients for bone marrow transplantation, primarily due to acute lymphoblastic leukaemia [10]. In Poland, a few dozen procedures of this kind are performed every year, so the experience is not incidental. As part of such preparation (conditioning) patients usually receive doses of 10 – 12.5 Gy over the entire body (doses fractioned in this manner are believed to be the equivalent of single doses minus approximately 2 Gy), so they actually cause myeloablation, but a matching donor of haematopoietic cells is already prepared. Moreover, the standard dose is fractioned and administered in 2 – 5 fractions over 2 – 3 days. Finally, the patients wear covers to protect the lungs and the head [10]. The differences are not significant with regard to the early effects for the haematopoietic system (myeloablation), but they will affect the distant effects, as this amount of radiation, received without any protection and at a single dose, may lead to leukoencephalopathy, cataract and pulmonary fibrosis. Nevertheless, these centres are presently prepared to manage patients with pancytopenia, possibly quickly finding appropriate bone marrow/haematopoietic cell donors, and conducting a transplantation, as well as fighting the direct effects of irradiation in organs outside the haematopoietic system (e.g. typically for 2 or 3 weeks after the irradiation with myeloablative doses, completely parenteral nutrition is required).

In 2019, Polish transplantation centres could admit up to a few dozen irradiated patients at once. Although after a radiation accident other services will use different methods in attempt to estimate the radiation doses received by individual patients, the medical management will be determined by the actual symptoms, i.e. the rate and size of deficits in individual types of blood cells. The behaviour of lymphocytes, measured by their absolute count, is the most frequently used as biological dosimeter. It is estimated that reduction of the absolute lymphocyte

count to 0.8 – 0.6 G/l within 3-6 days indicates a dose of 2–4 Gy; 0.6-0.3 G/l indicates a dose of 4-6 Gy, and 0.3-0.1 G/l suggests a dose of 6-8 Gy. Absolute lymphocyte count of  $\leq 0.1$  G/l corresponds to  $>0.8$  Gy. Such lymphopenia developing within hours after the exposition indicates a dose significantly exceeding 10 Gy [2, 4]. More accurate dose evaluation is possible with cytogenetic testing (in Poland over 20 laboratories offer these tests), but therapeutic decisions will have to be made before test results are available, and they will depend on disorders specific for individual irradiated patients. However, cytogenetic studies are presently included in standard management [4, 10].

As mentioned before, the last group of victims (significantly  $> 10$  Gy) cannot be saved due to the damage to the nervous and gastrointestinal systems. The greatest efforts are required in the management of patients who received over 5 Gy, but below 12 Gy. In these cases, the procedure of finding a bone marrow / haematopoietic cell donor must be promptly initiated, so that the transplantation can be conducted possibly soon. In 2019 in Poland 18 laboratories offered histocompatibility antigen tests (testing and matching of donors within the family), including 7 centres that also offer testing and matching of unrelated donors. Further management in these patients, consisting in transplantation of allogeneic haematopoietic cells is discussed in a recently published textbook [11].

In the past years, a significant change was introduced, as a relatively simple transplantation method from a half-matched donor (haploidentical transplant) [11]. These donors are much easier to find, as the group includes all the parents, all the children, half of the siblings, and some cousins. As in the discussed situation the search for a donor starts after irradiation (not before, as in the case in therapy of blood neoplasms), the time for donor matching is very limited (a few to several days). Although it is possible that an unrelated donor can be matched and will be available in this short period, matching a family member, including a haploidentical one, is much more probable. However, therapeutic management is determined by the deficits of neutrocytes and blood platelets, and haemoglobin concentration at a given time. The basic test assessing the disorders due to HS-ARS is complete blood count with the use of a device that determines absolute counts of the major white cells as minimum neutrocyte and lymphocyte counts. It is important to use absolute values, not percentages, when evaluating blood cell count disorders. Moreover, haemoglobin concentration is a better gauge of the degree of anaemia than red blood cell count or haematocrit. Quantitative thresholds have been established for certain risk levels and respective essential countermeasures; they are presented in Tables 1 – 3.

**Table 1. Levels of neutropenia intensity and essential necessary medical activities****Tabela 1. Progi natężenia neutropenii i konieczne podstawowe działania medyczne**

Absolute neutrocyte count	Basic risks and activities
<1.5 G/l	Suspected irradiation; assessment of patient's infection status; personal, environmental and food hygiene
<1 G/l	Increased risk of bacterial infections; reverse isolation; administration of G-CSF; potentially administration of co-trimoxazole or ciprofloxacin
<0.5 G/l	Agranulocytosis; risk of severe bacterial and fungal infections; immediate treatment if symptoms of infection occur
<0.1 G/l	Risk of septic shock; immediate therapy with broad-spectrum antibiotics

**Table 2. Levels of thrombocytopenia intensity and essential necessary medical activities****Tabela 2. Progi natężenia małopłytkowości i konieczne podstawowe działania medyczne**

Absolute platelet count	Basic risks and activities
<100 G/l	Suspected irradiation, but no risk of haemorrhage; observation is necessary
<50 G/l	Risk of haemorrhage in the case of blood plasma diathesis; close observation; avoidance of additional injuries
<20 G/l	Risk of haemorrhage; avoidance of physical exercise; relative indication for transfusion of platelet concentrate (PC)
<10 G/l	Severe risk of haemorrhage; indication for transfusion of PC every 2 – 3 days

**Table 3. Levels of anaemia intensity and essential necessary medical activities****Tabela 3. Progi natężenia niedokrwistości i konieczne podstawowe działania medyczne**

Haemoglobin concentration	Basic risks and activities
<12 g/dl	Only observation
<9 g/d l	Relative indication for transfusion of red blood cell concentrate (RBC), depending on the patient's tolerance of anaemia
<6 g/dl	Absolute indication for transfusion of RBC (minimum of 2 units)
<3 g/dl	Immediate life risk; management as above

### Management of neutropenia

Moderate neutropenia is difficult to interpret, as values of 1.0 – 1.5 G/l are relatively often observed in healthy population (innocent neutropenia), but the same numbers, if resulting from bone marrow damage, can be associated with risk. Absolute neutrocyte counts of <0.5 G/l (agranulocytosis), and especially those below 0.1 G/l, are always associated with risk. Neutropenia exposes the irradiated patient to bacterial or fungal infections from two sources: intrinsic and extrinsic. Intrinsic infections are due to various local foci of inflammation already existing at the moment of irradiation (e.g. teeth with caries), but also to physiological flora on the skin surface and in the gastrointestinal tract, which can become pathogenic in immunocompromised patients. First, the local foci of infection should be identified and promptly treated; secondly, good personal hygiene should be preserved,

even though in some patients there is room to improvement in that respect. If possible, microbiological tests should be performed (swabs from body orifices). Sources of extrinsic infections include mainly other people, but potentially also food and the environment of the irradiated patient. It is necessary to place the patient in an environment possibly free from microorganisms (maintaining the standard of acute leukaemia treatment departments), ensure very good food hygiene, including elimination of foods that cannot be sterilised, and implementation of reverse isolation [11, 12].

Typically, isolation is introduced to protect the environment against the infectious disease of the patient. Reverse isolation consists in protecting the patient against infection from the environment, including the personnel providing care, and visitors. There are a few levels of reverse isolation, depending on the degree of patient's neutropenia, from washing and disinfecting

hands and wearing a surgical mask prior to any contact with the patient, to wearing a cap, surgical coat and shoe covers, to using sterile overalls. These principles apply to all people in contact with the irradiated patient.

In the context of mass losses, the key issue will be to ensure basic hygiene practices in all the patients. There is no data available to confirm that transfusions of granulocyte concentrates could be effective in such situations, but using granulocyte colony-stimulating factor (G-CSF) is advisable [7-9]. It may significantly improve the survival of patients irradiated by 3.5 – 5 Gy. Many preparations containing this factor are available, including long-acting products, easier to use (they will require only 1 – 2 administrations in the entire therapeutic process, instead of 10 – 14 administrations). However, no data regarding irradiated patients are available. G-CSF shortens and increases the renewal of the granulocyte system. Its availability depends entirely on import, and it is highly unlikely that it could be accessible in sufficient quantities in the case of mass losses. In such situations prophylactic use of easily available anti-infective products, such as co-trimoxazole or ciprofloxacin, may have more impact. It is necessary to monitor the infection status continuously, and react immediately to adverse changes. Guidelines for the management is neutropenic fever and other infections complicated by neutropenia have been developed and published [11, 13], and are regularly updated. The principles are the same as in other patients with haematopoietic system disorders.

### Managing thrombocytopenia

Thrombocytopenia develops slightly later than neutropenia, but in this case the difference between the lower limit of normal and the platelet count effectively associated with severe haemorrhagic complications [14]. Such risk should be considered when the platelet count decreases to < 50 G/l, and demonstrates further decreasing trend. The threat can be iatrogenically increased if the patient receives acetylsalicylic acid or other non-steroidal anti-inflammatory drugs that damage the platelets. In this group of patients these medications are contraindicated. Paracetamol and metamizole do not damage blood platelets, so they should be used if an antipyretic drug is required. If the platelet count is below 20 G/l and decreases further, irradiated platelet concentrate (PC) should be transfused. Preferably, the PC can be filtered. Occurrence of haemorrhagic diathesis should be taken into account. Due to a short time of platelet circulation, such products must be transfused every 2 – 3 days, 4 – 6 units per transfusion. Relatively recently, drugs that stimulate platelet production have become available. These are substances that stimulate thrombopoietin receptor (thrombopoietin mimetics – thrombopoietin itself has no clinical use, as it causes

production of antibodies that neutralise it). The available products are romiplostim and eltrombopag. Their effect may go beyond stimulation of platelet production (and include stimulation of other cells), as the mentioned receptor is found not only on the cells involved in thrombocyte generation, and eltrombopag has been approved for the treatment of aplastic anaemia. This drug can be administered orally, which is convenient in the context of mass casualties. Unfortunately, no data are available regarding the use of this product in irradiated patients. Moreover, these drugs are covered by patent protection, and are produced by few manufacturers.

### Management of anaemia

Impaired erythrocyte production (easily detectable through the number of reticulocytes, an indicator of their production in 1 – 2 days) is masked for a long time by the long presence of erythrocytes in the circulation. Similarly, RBC transfusion is more effective than PC transfusion. However, it should be emphasised that, as in the case of RBC, the products used must be irradiated (the same refers to full blood, if it needs to be used). The goal is to remove histoincompatible lymphocytes present in blood preparations, preventing the graft-versus-host disease in patients immunocompromised by accidental irradiation. Administration of erythropoietin is not recommended; it should not be used after the transplantation of haematopoietic cells either.

### Convalescence

When the levels of peripheral blood parameters are safe, irradiated patients can be treated on an outpatient basis. The principles of care over patients after haematopoietic cell transplants were discussed separately [11]. The management of patients will be determined by their number, and the absorbed radiation doses. The more irradiated patients, the more basic treatment will be available, and vice versa: the fewer patients, the more complex management can be applied, also in order to collect data necessary for dealing with similar situations in the future. By analogy, the higher radiation dose has been absorbed, the higher the risk of additional complications, other than resulting from deficits of the three main cell types. Generally, the outpatient supervision will be the most intensive immediately after the hospitalisation, and will decrease with time. Eventually, patients after irradiation should be examined at least once a year. Apart from the monitoring of peripheral blood parameters, function of all other organs should be assessed, and any abnormalities should be addressed. Moreover, these patients need to be informed that if any suspicious symptoms occur, they should

contact a physician as soon as possible, preferably in a specialised facility.

Vaccinations also play an important part in prophylactic management. Annual vaccinations against flu and capsular microorganisms, e.g. pneumococci, meningococci and *Haemophilus influenzae* are particularly important.

The most serious post-radiation complications include neoplasms secondary to irradiation-induced DNA damage. Various neoplasms can develop, but the most common ones are blood neoplasms, including myelodysplastic syndromes and bone marrow leukemias, as well as acute lymphoblastic leukaemia. The risk is higher also in patients who, due to lower radiation doses, did not develop a clinically relevant haematological syndrome [15]. However, based on the data from Hiroshima and Nagasaki, the risk will increase proportionately to the absorbed dose, and will depend on the patient's age at the time of irradiation (higher in younger individuals). The same correlations apply to increased incidence of solid tumours [16].

## Conclusion

As mentioned above, the risk of acute radiation syndrome, including the haematological syndrome, in Poland is very low. However, it is not non-existent, and due to its limited probability, should it occur, the services and victims are likely to be unprepared. This article presents present views and management options, as well as the institutions that are already prepared to provide medical assistance to irradiated patients, due to their everyday activities.

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