

DOI: <https://doi.org/10.17816/PAVLOVJ643557>

EDN: TSJDHE

# Problems of the Clinic of Internal Medicine during the Great Patriotic War and the Early Postwar Period: Leafing Through the Historical Pages of the Journal 'Soviet Medicine'

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## ABSTRACT

**INTRODUCTION:** Domestic medical science has a rich history based on the contribution made by a considerable number of scientists and clinicians. The Great Patriotic War had a serious impact on the organization of medical care and training of medical personnel. It is important to note that despite all the difficulties, scientific research and publications in medical journals did not stop during the war years, including publications in the journal 'Soviet Medicine'.

**AIM:** To determine the most common problems of the clinic of internal medicine during the Great Patriotic War and in the first postwar year.

Publications of the journal 'Soviet Medicine' for the period from 1941 to 1946 were analyzed. During the period under study, Soviet physicians addressed issues of using new examination methods (radiological, endoscopic), as well as various aspects of etiology, pathogenesis, clinical manifestations and treatment of many therapeutic diseases. The most frequently published works were on the treatment of pneumonia, essential hypertension, rheumatic fever, infectious diseases.

**CONCLUSION:** In the period of the Great Patriotic War, the therapeutic science continued its development. Among the most frequently described pathologies were infectious diseases, rheumatic fever, pneumonia, cardiovascular diseases, diseases of the gastrointestinal tract, kidneys, and tumors.

**Keywords:** Great Patriotic War; Soviet healthcare; history of medicine; military medicine; Soviet medicine; rheumatic fever; Ermolyeva.

## To cite this article:

Kotlyarov SN, Markova EV. Problems of the Clinic of Internal Medicine during the Great Patriotic War and the Early Postwar Period: Leafing Through the Historical Pages of the Journal 'Soviet Medicine'. *I.P. Pavlov Russian Medical Biological Herald*. 2025;33(2):303–316. DOI: 10.17816/PAVLOVJ643557  
EDN: TSJDHE

DOI: <https://doi.org/10.17816/PAVLOVJ643557>EDN: [TSJDHE](#)

# Проблемы клиники внутренних болезней в годы Великой Отечественной войны и раннее послевоенное время: листая исторические страницы журнала «Советская медицина»

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## АННОТАЦИЯ

**Введение.** Отечественная медицинская наука имеет богатую историю, основанную на вкладе значительного числа ученых и клиницистов. Великая Отечественная война серьезно повлияла на организацию медицинской помощи и подготовку медицинских кадров. Важно отметить, что, несмотря на все сложности, научные исследования и публикации в ряде медицинских журналов не прекращались в годы войны, в том числе в журнале «Советская медицина».

**Цель.** Определить наиболее распространенные проблемы клиники внутренних болезней за период Великой Отечественной войны и первый послевоенный год.

Были проанализированы публикации журнала «Советская медицина» за период с 1941 по 1946 годы. За изучаемый период советскими медиками рассматривались вопросы использования новых методов исследований (рентгенологический, эндоскопический), а также различные аспекты этиологии, патогенеза, клинических проявлений и лечения многих терапевтических заболеваний. Наиболее часто публиковались работы, посвященные лечению пневмонии, гипертонической болезни, ревматизма, инфекционных заболеваний.

**Заключение.** В период Великой Отечественной войны терапевтическая наука продолжила своё развитие. Среди наиболее часто описываемых патологий встречаются инфекционные заболевания, ревматизм, пневмонии, сердечно-сосудистые заболевания, поражения желудочно-кишечного тракта, почек, опухоли.

**Ключевые слова:** Великая Отечественная война; советское здравоохранение; история медицины; военная медицина; советская медицина; ревматизм; Ермольева.

## Как цитировать:

Котляров С.Н., Маркова Е.В. Проблемы клиники внутренних болезней в годы Великой Отечественной войны и раннее послевоенное время: листая исторические страницы журнала «Советская медицина» // Российский медико-биологический вестник имени академика И.П. Павлова. 2025. Т. 33, № 2. С. 303–316. DOI: [10.17816/PAVLOVJ643557](https://doi.org/10.17816/PAVLOVJ643557) EDN: [TSJDHE](#)

INTRODUCTION

Therapy is one of the fundamental areas of medicine. In the year of the 80th anniversary of the Victory, of considerable interest is the medical therapeutic science in the period of the Great Patriotic War. To note, therapy of that time was a very broad area of medicine, since there were no such individual specialties as cardiology, or pulmonology, and a therapist was engaged in diagnosis and treatment of all therapeutic patients.

The period before the war was marked by the intensive development of medicine: new hospitals and ambulatories were built, new diagnostic and treatment methods were introduced [1, 2]. This required the development of medical science and education. In a short period of time, instead of 13 higher medical educational institutions with 8,500 students in 1913, in 1941 there already were 72 higher medical educational institutions with 115 thousand students (not taking into account the Baltic States). As a result, the number of doctors also increased significantly. Indeed, instead of 19,800 doctors of the pre-revolutionary Russia, by the beginning of 1941, more than 140 thousand doctors were already working in the Union of Soviet Socialistic Republics (the USSA). During the Great Patriotic War alone, higher medical educational institutions of the country graduated more than 60 thousand young specialists [3]. The growth of the number of mid-level medical personnel

was even more intense: in 1913, there were 46 thousand mid-level medical workers, and by 1940, their number increased to 472 thousand. In 1940, the number of secondary medical educational institutions in the country amounted to 990, with more than 220 thousand students studying in them [4].

Thus, during the three decades preceding the Great Patriotic War, the number of students, medical educational institutions and academic personnel increased significantly, which played a role in the growth of scientific studies and their publications. Due to such intensive development of medicine, there was a significantly increased demand for knowledge among medical workers, and medical scientific journals successfully performed this function. By the beginning of the Great Patriotic War, many scientific medical journals were published in the Soviet Union specializing on both fundamental and clinical disciplines, as well as interdisciplinary clinical journals. Some journals suspended publications during the war, but a number of journals continued their activity.

The **aim** of this study to analyze the most common problems of the internal medicine clinic during the Great Patriotic War and the first postwar year based on the publications in the journal 'Soviet Medicine' for the period from 1941 to 1946, available in the archive of the library center of Ryazan State Medical University (Table 1).

Table 1. Issues of the journal 'Soviet Medicine' for 1941–1946 included in the analysis

Year (periodicity)	Journal issues included in the journal
1941 (issued twice a month)	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13-14, 15-16, 17-18
1942 (issued monthly)	1-2, 5-6, 7, 8, 9, 10, 11-12
1943 (issued monthly)	2-3, 9, 10, 11-12
1944 (issued monthly)	1-2, 4-5, 6, 7-8, 9, 10-11, 12
1945 (issued monthly)	1-2, 3, 4-5, 7-8, 9
1946 (issued monthly)	1-2, 3, 4, 5-6, 7, 8-9, 10, 11, 12

The journal 'Soviet Medicine' was released from 1937 to 1992. During the analyzed period the edition addressed the aspects of theoretical and practical medicine, published articles on the successes of the Soviet science, the healthcare system. The content of the journals included articles on *preventive and therapeutic measures among the population, the wounded, and on the work of hospitals*. Special attention was paid to the results of scientific research, important for improving further work.

The authors of the articles were government leaders, prominent scientists, and employees in the field of medical servicing of the population. In addition to describing current issues in medicine, the journal regularly published *reviews of medical publications, bibliographic indexes on the most important problems of medical theory and practice, abstracts from foreign literature, materials on the history of medicine, and biographies of famous doctors and medical figures*. Thus, by the beginning of the Great Patriotic War, the

journal was covering many key aspects of medicine. Table 2 shows the journal's plan for 1941, posted by the editorial staff in issue 3.

These topics were relevant not only at the beginning of the war, but did not lose significance in the subsequent years of war. Issues of provision of medical care during the Great Patriotic War were described in many areas: *surgery, orthopedics and traumatology, infectious diseases*, etc. Special attention was paid to the rehabilitation of soldiers in war- and peacetime. Issues related to blood transfusions and the wound process were of much concern. Great importance was given to methods of *processing instruments, the use of new technologies*, including those caused by military necessity (Figure 1).

Among the therapeutic problems during the Great Patriotic War, various aspects were addressed including the diagnostic methods available for the time. Associate professor Ya.G. Edelman emphasized the significance of *physical examination methods and clinical thinking* [5], which remains relevant until today. An honored science worker, professor, Director of the Clinic of Therapeutic Nutrition of the Institute of Nutrition of the Academy of Medical Sciences, Head of the Department of Therapeutic Nutrition of the Central Institute for Advanced Medical Education, M.I. Pevzner, known as the founder of diet therapy and the initiator of the introduction of diet therapy in the medical institutions of our country, also presented his methods of examining patients with gastrointestinal diseases [6]. In his article, the author focused on the improvement of physical examination methods, which in most cases permitted to make a presumptive correct diagnosis that was further confirmed by instrumental examination data (X-ray, gastric juice and feces analysis, rectoscopy and gastroscopy).

Professor B.P. Kuschelovsky from the Faculty Therapeutic Clinic of Sverdlovsk Medical Institute described some clinical characteristics of systolic murmur, which was at that time taken into account in screening for suitability for military service. In his article, he analyzed the characteristics of various auscultatory phenomena and proposed to introduce the *concept of systolic murmur as a physiological phenomenon* in the practice of medical examination [7].

In addition to physical examination methods, instrumental examination methods, such as gastroscopy, rectoscopy, X-ray methods, were widely used in diagnostics [8–11]. Much attention was given to X-ray examination methods, including the description of the development of X-ray service in the pre-war years, which became possible owing to a wide participation of the domestic scientists in the investigating the nature of X-rays and in designing X-ray apparatuses [10]. The problem of laboratory examinations was also of significance at that time. Attention was given to laboratory examination of blood [12], a new device for

determining the surface tension of urine was described [13]. In 1941, Professor I.A. Kassirsky in his article '*On the Blood Picture*' discussed the clinical significance of *anemia, the need to take into account its hypochromic and hyperchromic character, and the size of erythrocytes*. He gave special attention to *leukocytes and 'leukocyte profile'*, and for its analysis, proposed presentation of *neutrophils, lymphocytes, eosinophils and basophils in separate columns of the table indicating a range of their normal values*. '*By connecting the dots in each column corresponding to the absolute number of a particular type of leukocyte, we obtain a broken line, which represents the leukocyte profile... The normal leukocyte profile of an adult has a sharpened shape with the highest point on the neutrophils and a steep descent to the lymphocytes*' [12]. The leukocyte formula according to I.A. Kassirsky, presented in this and subsequent works of the scientist, is well known to every clinician today.

Among the therapeutic problems, the topics of active discussion were issues of diagnosis and treatment of pneumonia [11, 14], bronchial asthma and bronchiectasis [15]. Lobar pneumonia was a serious problem in wartime conditions. Its more severe course was noted, it was more common in men, and was more severe in them than in women; mortality in men was also higher. In wartime conditions, localization of pneumonia in the upper lobe significantly prevailed. In this case, the disease often ran an areactive or subreactive course. A large percentage of severe cases was observed with pronounced changes in the cardiovascular system in the form of a significant decrease in blood pressure, discrepancy between pulse and temperature, changes in the parenchymatous organs (albuminuria, hematuria, liver enlargement), and in the central nervous system. An increase in the duration of the process as a whole was noted due to the protracted development of the crisis, prolongation of the recovery period, and a large number of complications (slow resolution, tuberculosis 6.2%, abscess formation 0.9%, etc.). The arsenal of drugs for the treatment of pneumonia was very limited and included sulfidine, which was effective in case of early start of treatment [11, 14]. It is important to note that sulfidine, or sulfapyridine, was synthesized in 1937 at the Department of Organic Chemistry headed by Professor I.Ya. Postovsky, at the Ural Industrial Institute, and in 1942, taking into account the available clinical data on its effectiveness, it was put into industrial production at the Sverdlovsk Chemical and Pharmaceutical Plant [16]. In fact, the first experience in use of sulfidine for the treatment of lobar pneumonia and bronchopneumonia refers to the Winter War with Finland in 1939–1940. At that time, according to a 1941 publication by M.A. Strigin from the Military Medical Hospital, the use of sulfidine allowed the fatal outcomes of lobar pneumonia to be avoided, although before that the mortality rate was 6.9% [11].

**Table 2.** Plan of the journal 'Soviet Medicine' for 1941 (spelling and punctuation are given in the original version)

Journal sections	Topics of publication
I. THEORY AND PRACTICE OF MEDICINE	<ol style="list-style-type: none"> <li>1. Epidemic typhus, enteric typhus and paratyphoid, dysentery, whooping cough, scarlet fever, diphtheria, measles, influenza, anaerobic infections, their early diagnosis, prevention, chemotherapy</li> <li>2. Tuberculosis. Collapse therapy, chemotherapy, preventive vaccination with BCG, early identification of tuberculosis and clinical picture of different forms, especially in children and adolescents</li> <li>3. Brucellosis. Clinical picture and treatment, early diagnosis</li> <li>4. Rheumatic fever (Bouillaud's disease). Infectious and other arthritis</li> <li>5. Malaria: combatting malaria in water reservoirs; treatment of malaria</li> <li>6. Cardiovascular diseases: angina pectoris, myocardial infarction, essential hypertension</li> <li>7. Renal diseases: Bright's disease (diet therapy, working capacity, prevention). Disorders in urination</li> <li>8. Malignant neoplasms. Their early diagnosis</li> <li>9. Acute and chronic pneumonias. Treatment</li> <li>10. Hepatitis, cholecystitis. Diet therapy of hepatic diseases</li> <li>11. Food toxic infections</li> <li>12. Helminthic infections. Methods of elimination of their foci</li> <li>13. Tularemia. Clinical picture, prevention and therapy</li> <li>14. Shock. Treatment</li> <li>15. Fractures and luxation's. Gunshot wounds of bones and joints</li> <li>16. Wound treatment. Osteomyelitis. Active prevention of anaerobic wound infections. Treatment of long-term wound complications. Reconstructive surgery</li> <li>17. Traumatology. Methods of active prevention and correct treatment of injuries of military, industrial and agricultural character. Methods of accelerating of working capacity after injuries</li> <li>18. Issues of anesthesia and pain relief</li> <li>19. Vitamins. Vitamin deficiency; vitamin therapy</li> <li>20. Peripheral nerve diseases. Nerve complications of chronic infections</li> <li>21. Oral sepsis. Stomatitis. Maxillofacial surgery</li> <li>22. Pyoderma. Tuberculosis of the skin. Fungal diseases. Eczema</li> <li>23. Trauma of the hearing organs. Acute ear diseases in infectious diseases. Acute laryngeal stenosis. Tonsillitis</li> <li>24. Obstetrics and gynecology issues</li> <li>25. Trachoma. Keratitis and conjunctivitis. Traumatic eye injuries</li> <li>26. Endocrine disorders. Endemic goiter. Hyperthyroidism</li> <li>27. Blood transfusion. Oxygen therapy. Chemotherapy, hormonal therapy, physiotherapy, health resort treatment</li> <li>28. Medical errors (diagnostic and therapeutic)</li> <li>29. Syphilis and gonorrhea</li> <li>30. Sepsis</li> <li>31. The most important issues of physiology and general pathology</li> </ol>
II. HEALTHCARE ORGANIZATION	<ol style="list-style-type: none"> <li>1. Work plan of the rural medical station</li> <li>2. Work of the feldsher station</li> <li>3. Work of the obstetric station</li> <li>4. Collective farm maternity hospital</li> <li>5. Collective farm nursery</li> <li>6. Work of the consultation service</li> <li>7. Organization of anti-epidemic and sanitary service in the rural district</li> <li>8. General plan of measures to combat childhood morbidity and mortality</li> <li>9. Work of a visiting nurse in the village</li> <li>10. Organization of the fight against epidemic typhus</li> <li>11. Organization of the fight against enteric typhus, summer childhood diarrhea, etc.</li> <li>12. Disinfection activity</li> <li>13. Water supply (sanitary supervision)</li> <li>14. Sanitary improvement of the village (bathhouses, schools)</li> <li>15. Work of the public activists in the village</li> <li>16. Organization of medical work during the summer field work</li> <li>17. Work of the healthcare section under the councils of workers' deputies</li> <li>18. Accounting and reporting of the rural medical station</li> <li>19. Design and estimate work, construction and repair of medical and preventive institutions</li> <li>20. Sanitary food control</li> <li>21. Sanitary educational work in the village</li> </ol>



1. Provision of first and qualified aid at various stages of evacuation of the sick and wounded
2. Tentative schemes of work of individual hospitals in various zones of action
3. Sanitary aviation
4. Issues of wartime epidemiology
5. Mobile laboratory and possibilities of its use
6. The service of the first and qualified aid in hospitals and military hospitals, industrial facilities of the village and city
7. Types of gas shelters, bomb shelters, their calculations and purposes
8. Inspection of food products for contamination with toxic substances
9. Self-help and mutual assistance in combat and at work
10. Sanitary and educational work on sanitary and chemical defense. Instructional material for personnel training

## Б. Ф. СМЕТАНИН

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Учитывая большую капиллярность клетчатки стебля подсолнуха, я начал применять ее для перевязок гнойных ран в 1942 г. в ЭГ (нач. — капитан медицинской службы Х. Г. Ибрагимов), а с 1943 г. в хирургическом отделении Алексеевской больницы.

Учитывая большую канализируемость клетчатки стебля подсолнуха, я начал применять ее для перевязок гнойных ран в 1932 г. в ЭГ пач. капитан медицинской службы Х. Г. Ибрагимов, а с 1943 г. в хирургическом отделении Алексеевской больницы.

Клетчатку стебля подсолнуха очищают от корки стебля, измельчают ножом или ножищами и закладывают в про- стегиваемые марлевые мешочки различной величины, которые накладывают на рану поверх нескольких марлевых торцев накладывают на рану поверх нескольких марлевых салфеток вместо ваты. Мелкие кусочки стебля, пропитавшиеся сальфетом, высушивают, оставляя бинт повязки сухим. Раздражающего действия на рану такая повязка не оказывает.

Подсолнечник (*Helianthus annuus*) — растение из семейства сложноцветных. Корень и стержневой стебель его выносятся рыхлой сердцевинной. Стебель подсолнуха используют для получения низких сортов бумаги; богатая калием зола стебля и корня используется для получения поташа и идет на удобрение.

При микроскопическом исследовании клетчатка стебля подсолнуха представляется состоящей из отдельных крупных клеток, которые хорошо впитывают жидкость, адсорбируя плотные части (глио, раствор краски) на периферии своей

плотные насаждения, растущие кустами на периферии свая. Вследствие этого материалы, имеющие более высокие коэффициенты стабильности под нагрузкой, чем материалы с более низкими, в стабильности под нагрузкой по сравнению с таковой других материалов распространяемых неразрывных материалов, мы произвели следующий простой опыт. Возли по 100 м наиболее часто употребляемых неразрывных материалов и поместили их в воду до полного насыщения. При этом оказалось, что клетчатка стебля подсолнуха (измельченная) для полного насыщения требует времени в 10 раз больше, чем другие неразрывные материалы, не поглощая воду в значительном количестве (см. таблицу вращивающей способности некоторых неразрывных материалов).

<sup>1</sup> Доложено на заседании общества хирургов Татарской АССР в феврале 1944 г. и на съезде участковых врачей Татарской АССР 29.IX.1944 г.

4. ЦОВЕТСКАЯ МОДИФИКАЦИЯ, № 7-8

25

СОВЕТСКАЯ МЕДИЦИНА № 7—8 1945 г.

всасывающей      Сравнительная таблица      перевязочных  
                         способности некоторых      материалов

Название материала	Первоначальный вес в мг	Время, потребное для полного насыщения водой	Вес после полного насыщ. в мг
Марля гигроскопическая . . . .	100	1—2 секунды	850
Вата . . . . .	100	12 секунд	2000
Лигнин . . . . .	100	1—3 секунды	1500
Мох . . . . .	100	3—4 минуты	1200
Клетчатка подсолнуха куском . .	100	2—5 минут	1600
» » измельченная	100	2—4 минуты	2500

Эти качества клетчатки стебля подсолнуха очень ценны для любой повязки, в том числе и для асептической. Обладая большим пределом насыщения жидкостью, клетчатка подсолнуха создает условия постепенного, по мере его образования, всасывания отделяемого раны, хорошо предохраняет от пропитывания раневым отделяемым битт повязки, дает значительную экономию марли и ваты.

Клетчатку стебля подсолнуха можно применять при перевязках ран наравне со всеми общепринятыми перевязочными материалами.

В условиях сельскохозяйственных районов клетчатка подсолнуха может быть заготовлена в достаточном количестве.

**Fig. 1.** Photo of the article by B. F. Smetanin 'Sunflower stem fiber as a substitute for absorbent cotton wool and gauze' from the journal 'Soviet Medicine' No. 7-8, 1945.

Among respiratory problems, of attention was bronchial asthma. As a means against severe attacks of bronchial asthma, injections of adrenaline or atropine in combination with intramuscular injections of 25% magnesium sulfate were proposed [15].

Cardiology issues, including rheumatic fever, were widely covered. Diagnostics of rheumatic lesions was successful, but treatment was problematic. The main drug was sodium salicylate, which *'had a good effect on polyarthrititis, but not on the rheumatic process in the heart'*, in particular, on the development of heart diseases. Long-term use of salicylates was suggested, among other things, in the form of a combination of oral and intravenous administration, and an additional prescription of pyrazolone, analgesics and antipyretic from the pyrazolone group, possessing analgesic, anti-inflammatory and antipyretic effect. At that time, the etiology of rheumatic fever was still unknown, but its connection with the previously suffered tonsillitis was already clear. In this context, it was suggested that attention should be paid to cases of tonsillitis, improvement of their identification and arrangement of dynamic observation of tonsillitis especially in patients with a history of rheumatic attacks. There was also discussed the experience of American doctors in using streptocide for streptococcal throat infection in patients with rheumatic fever, to prevent its recurrences [17].

Another common cause of heart disease, apart from rheumatic fever, was *syphilis*, which, according to the data of Professor I.M. Rybakov presented in his article of 1941, was the cause of 10% of heart diseases with lesions of the aorta, large vessels and myocardium [18]. In his article 'Some Issues of Treatment of Patients with Cardiovascular Diseases', Professor I.M. Rybakov proposed using strophanthin, caffeine and camphor in treatment for acute heart failure. For the treatment of chronic heart failure, it was recommended to use a 'fasting regimen', such as *'restriction of food and water intake, achievement of good bowel movement, bed rest, restriction of diet in terms of proteins and fats, in order to create conditions for most effective work of cardiotonic agents. Further, the method of choice is digitalis therapy, which gives ... a remarkable effect in most cases ...'* [18]. Digitalis was proposed to be used for 10 days until achievement of the therapeutic effect, then its intake should be interrupted for transfer to the fasting regimen, and then digitalis therapy could be continued. In chronic heart failure with cardiac asthma, it was proposed to do bloodletting (especially in case of a combination with hypertension), to use morphine with caffeine subcutaneously and subsequent digitalization with intravenous infusion of glucose [18].

Another important problem was therapy of essential hypertension, since at that time there were no effective antihypertensive drugs [19, 20]. According to Doctor of Medical Sciences A.M. Sigal, cases of recovery from essential hypertension were very rare, most common were *'its transient forms'* preceding a stable permanent form. The proposed treatment was diet therapy and limitation of the intake of liquid. Sedatives were also used [19]. In the article 'Clinical Observation of the Hypotensive Effect of Carbocholine and Salsolin' of 1941, a group of authors of the Department of Polyclinic of Internal Diseases of the First Moscow Medical Institute reported the results of using novel drugs carbocholine and salsoline, and also described the effectiveness of drugs known at that time. According to authors, the leading role was assigned to bromides, which *'in the adequate dose not only produce a beneficial symptomatic effect, but also influence the level of the blood pressure itself...'* [20]. Chloral hydrate and luminal were also used for treatment; most popular were diuretics. Papaverine and atropine could be prescribed *'as an additional means to prevent or reduce the already existing regional vascular spastic phenomena'* [20]. According to the authors, the use of aspirin deserved attention in the treatment of hypertension as a 'vasodilator'. Salsolin is an alkaloid isolated from the Central Asian plant *Salsola Richteri*, it has a soothing effect on the central nervous system and causes dilation of blood vessels through a decrease in the tone of the vasomotor center. Salsolin and structurally close to it salsolidine were isolated by A.P. Orekhov in 1933–1935 and were for many years included in the arsenal of means for the treatment of hypertension in the form of chloral hydrates. It is interesting that academician A.P. Orekhov, who devoted his scientific life to the study of alkaloids, was awarded the academic degree of Doctor of Chemical Sciences in 1935 without defending a dissertation<sup>1</sup>.

Professor Ya.Yu. Shpirt (Frunze Therapeutic Clinic and Clinical base of Department of General Pathology of the All-Union Institute of Experimental Medicine, AUIEM) presented a method for treating essential hypertension with a magnesium paranephric block [21]. The article gives a classification of three stages of essential hypertension: the first is initial, the second is nervous-visceral and the third is involutinal. The author noted that, *'despite an enormous number of proposed methods of treatment, a significant degree of skepticism is present regarding treatment of essential hypertension. This can be explained by the fact that, in the opinion of most authors, in the initial stage all means are effective, and in some cases, the elevated pressure may decrease on its own, while with an advanced clinical picture, the*

<sup>1</sup> ISARAN. Archives of the Russian Academy of Sciences [Internet]. Available at: <https://arran.ru/isaran>. Accessed: 15.12.2024.



*medicinal therapy can decrease blood pressure only for a short period, and this decrease comes at a high cost of weakening of the left ventricle. In the so called 'terminal stage' the treatment is hopeless'* [21]. Considering the leading role of the nervous component in the genesis and course of the disease, as well as the low efficiency of treatment, the authors proposed a therapeutic intervention as a direct action on the nervous system by introducing 100 cm<sup>3</sup> of 1% magnesium sulfate solution into the paranephric region, mainly once. A prolonged use of magnesium sulfate (per rectum, subcutaneously, intramuscularly or intravenously), resulted in subjective improvement, but the hypotensive effect was only short-term and insignificant. The proposed treatment method had many limitations and objectively was not a successful therapeutic strategy.

A significant part of publications touched upon the issues of prevention of tuberculosis, epidemic typhus, enteric typhus, malaria and other dangerous infections in wartime conditions. Thus, N.A. Kost pointed out the need to fight gastrointestinal diseases paying more attention to the regions with a high concentration of evacuated population [22, 23]. Attention was also paid to multidisciplinary problems, such as *low-grade fever*. Thus, when discussing the low-grade fever, Professor B.S. Bredvo suggests it be considered as a *separate clinical syndrome*. The most common cause of the syndrome is infectious diseases, upon that, the author divided non-infectious low-grade fever into endocrine and autonomic ones. The therapy allowed a positive therapeutic effect to be achieved in 50% of all cases [24].

Both in wartime and peacetime, there was enhanced attention to detection of cancer and etiology of hepatitis (post-salvarsan jaundices, etc.) [25, 26]. Professor A.S. Mnushkin, Head of the Department of Hospital Therapy at the Samarkand Medical Institute, presented the analysis of data on the clinical picture and pathogenesis of toxic hepatitis with ascites. This problem had been known to clinicians in Central Asia since 1931, but the interest in its studying especially increased in 1945, when significant outbreaks of this disease were observed in the Samarkand region in summer and autumn (approximately 500–600 persons). Like in the 1930s, the disease almost always affected the entire families, with equal severity of the process across the members of the family. When studying the medical history of all patients, 90% of them were found 'to be consuming bitter bread and poor-quality flour for a long time' in winter 1945 (for at least 3–4 months). In addition, in the history of some patients there was noted a monotonous diet with a very low caloric content. The majority of cases had common symptoms: changes of liver (hepatomegaly), peritoneal syndrome (ascites) and functional disorders of the liver, detected by special biochemical examinations. In 63% of

cases, dermatitis was observed, and in 55% atrophy of the tongue papillae. Mortality reached 14–16% [27].

Attention was also given to issues of both nutrition and vitamin deficiencies [28, 29]. Pathology of the digestive system was also discussed, for example, gastric secretion in vitamin C deficiency [30], combined treatment of peptic ulcer with alkalis and vitamin C [31, 32]. Alkalis used for the treatment of peptic ulcer served as a prototype of modern antacids. Specialists of the Clinic of Therapeutic Nutrition of the All-Union Institute of Nutrition, in particular, O.L. Gordon, described hypoglycemic and hyperglycemic phenomena in patients with gastric pathology, and their treatment [33]. The author's conclusions were as follows: *'In the origin of hyper- and hypoglycemia, a role is played by accelerated absorption of carbohydrates and increased excitability of the autonomic nervous system. Sometimes these syndromes are the main disorder, in which case they can imitate an organic disease of the stomach, but more often there is a combination of an anatomical damage to the stomach with hyper- and hypoglycemia. A carbohydrate-limited diet is very effective in hyper- and hypoglycemic phenomena, and in case of a combination with limited damage to the stomach, a sparing diet limited in carbohydrate is indicated'* [33].

In the journal, there were also discussed approaches to treatment of peptic ulcer disease. The indications for surgical treatment of patients with peptic ulcer disease were clarified from positions of a therapist [34]. A.L. Myasnikov distinguished several approaches to differential diagnosis and therapy of calculous and non-calculous cholecystitis: *'One most important therapeutic measure is the diet. The second most important treatment method for chronic cholecystitis and cholelithiasis is use of mineral waters and salts. The third therapeutic method is duodenal intubation... The fourth method to be added to the above three ones is administration of bile acids or their salts as cholesteric drugs. It is possible to administer bovine bile in capsules or bile acid salts orally... The best means is to prescribe a preparation of bile acids (dehydrofolic acid), the so called decholine orally or intravenously... Of course, one should not forget that many other drug such as atofan, menthol oil, podophyllin, camphor, rhubarb, and salicylates also possess a choleric effect. Abroad, a wide use is made of preparations based on combinations of bile acids with various agents: lecithin (Bilival), colloid silver (Choleval), urotropine (Felamin). Personally, I have not had the opportunity to verify that treating cholecystitis with bile acids adds anything significant to dietary and other traditional therapies. The next, fifth group, are drugs with anti-infectious effect. They include urotropine, sulfonamides and penicillin... One should also mention the sixth group of measures directed against pain and*



*spasm of the bile system, such as preparations of atropine, belladonna, opium (papaverine), morphine and pantopon... The same effect in cholecystitis is achieved with the seventh category of therapeutic measures – various kinds of thermal exposure. Apart from relief of pain and spasm, heat therapy is useful through its anti-inflammatory effect... It is best to use it not in the form of fashionable instrumental physiotherapy procedures, but in the form of heating pads, compresses and especially poultices... And, finally, the most important kind of treatment for cholecystitis is, of course, surgical intervention...* [35]. The authors present successful data on the use of cholosas in liver and bile duct diseases [36], and of immortelle in cholecystopathy [37]. Cholosas is an extract of rose hips, which has long been used empirically. In the experiment, it proved to be a fairly active agent with a favorable effect on both the secretory and motor functions of the liver. The increase in the total amount of bile, as well as in the content of cholates in it, according to the authors, justified the use of cholosas in practice for liver diseases. The therapeutic effect of cholosas was explained not only by changing the chemical composition of bile, but also by its spasmolytic effect on the smooth muscles of the intestine, and partly by the presence of vitamin C in it, which helps increase glycogen in liver cells [37].

Another article describes the experience of A.M. Shvartzblat in using a tormentilla decoction for hemocolitis [38]. What is meant here is a domestic plant zavyaznik, or tormentilla (Latin: *Tormentilla*), which root contains up to 15–20% of astringent agents. The following example is given for illustration: *'A female patient with lobar pneumonia developed a severe crisis with equally severe hemocolitis. This threatening at the moment complication of pneumonia was eliminated practically within one day. Hemocolitis (dysentery?) that reoccurred in the same patient in 7 years, was again cured with tormentilla decoction within two days'* [38].

Among the problems of the urinary system, 'serositis' in kidney diseases [39] and 'war-related nephritis' [40] have been described.

It is important to note that at that time, the modern medical drugs were practically absent. The doctors had only a few groups of drugs in their arsenal, most of which are no longer used at present. Antibiotic therapy was not as popular as it is now. Introduction of the new drugs became possible owing to the domestic chemical and pharmaceutical industry. The Scientific Research Chemical and Pharmaceutical Institute of the USSR People's Commissariat of Health synthesized a number of new drugs: sulfazole and methylsulfidinane group drugs for the treatment of meningitis, pneumonia, gonorrhea, etc.; hepalon for the treatment of Biermer's anemia; also vitamins, etc. Sulfazole was identical to foreign

sulfamethylthiazole, RP 146, ultraseptil. Sulfazole was a chemotherapeutic drug with a therapeutic effect similar to that of sulfidine in lobar pneumonia, meningitis, and gonorrhea. Sulfazole was found to have a specific therapeutic effect on pneumococcal pneumonia, including infants. Sulfazole revealed an evident therapeutic effect in meningococcal meningitis [41]. Methylsulfidine was a chemotherapeutic drug with the effect similar to sulfidine and sulfazole in lobar pneumonia, meningitis, and gonorrhea. It was used in the same dosages as sulfidine [42].

In 1944, the journal published an article 'Penicillin and its Application' by Professor Z.V. Ermolyeva, who, together with her colleague L.M. Yakobson was awarded I degree Stalin prize for the development of the first domestic penicillin. She was awarded a gold medal, diploma and money reward 100 thousand rubles. Zinaida Vissarionovna donated the money she received to the needs of the front, to construct a fighter plane, which was given her name. In the article, Professor Z.V. Ermolyeva described the history of penicillin, starting with 1928, when a British scientist A. Fleming studying staphylococcus grown next to a mold colony, isolated a new biological agent, which killed the microbes. *'The mold strain that produced an agent causing this effect was identified as *Penicillium notatum*. The filtrate of the broth culture of this mold, and then the active purified substance obtained from this filtrate, was named penicillin by Fleming. However, this work passed unnoticed... And only in connection with the war (1941–1943), Chain, Abraham, Florey and others published detailed studies on the chemistry and therapeutic action of penicillin. In our Union, in the Department of Microbial Biochemistry of AUIEM (authors' note: All-Union Institute of Experimental Medicine), 93 strains of *Penicillium* were isolated. As shown by the studies of T. I. Balezina, active was the strain identified as *Penicillium crustosum*. The strain of *Penicillium notatum* that we had at our disposal (isolated by us from the air of a gas-bomb shelter) had lower activity. The active bacteriostatic substance obtained from the culture liquid of *Penicillium crustosum* was named by us penicillin-krustosin. Of critical significance is the fact that penicillin-krustosin acts not only on gram-positive cocci, but on some gram-negative bacteria as well (although to a weaker degree). This property distinguishes it from Flemming's penicillin, which does not have this effect. Penicillin does not belong to fast-acting antibacterial agents, and its effect is primarily bacteriostatic in character...* [43]. Clinical trials have shown the effectiveness of penicillin in sepsis, wound infections and other infections.

*'Such favorable results, obtained on a large clinical material, necessitated the industrial production of penicillin. The technology for this production was*

*developed in our laboratory, and at present the production of purified and dry penicillin of AUIEM is being organized at two plants and of the native one in various parts of the front. Our preparation was tested in October 1943 by the Pharmacological Committee of the Scientific Medical Council of the USSR People's Commissariat of Health' [43]. The use of domestic penicillin rendered invaluable help in the treatment of infections during the Great Patriotic War (Figure 2).*

'A Decree of the Presidium of the Supreme Soviet of the USSR of June 26, 1940 had a huge impact on the quality of work of medical and sanitary institutions. Along with the general improvement of labor discipline, reduction of absenteeism, tardiness, and a sharp decrease in turnover, an improvement in the quality of medical care for patients is also noted in most medical institutions. As a result of the restructure carried out on the basis of the Decree of the Presidium of the Supreme Soviet of the USSR, a team method of servicing patients was introduced in a number of medical institutions: doctor — nurse — nurse's aide; emergency duty shifts were organized; patient servicing at night-time hours was improved; the work of laboratories and X-ray rooms was expanded; the number of in-hospital and out-of-hospital consultations increased, etc.' [1].

The journal also paid attention to issues of providing the urban and rural population with medical care, and to analysis of the problems of the urban and rural healthcare. The role of a therapist was highly valued in the field medical service [44]. The journal placed the articles about outstanding personalities in medicine of different epochs Hippocrates, P.V. Postnikov, and others. Book reviews were published. Questions from the foreign press were always brought to the attention of Soviet doctors. A review of the latest data in gastroenterology (abroad) was published in one of the issues in 1946 [45]. The 'Information and Chronicle' section of the journal placed the information about meetings, conferences on healthcare issues, and statistical data.

The experience accumulated by 'Soviet Medicine' during the Great Patriotic War, was also useful for changing approaches to the training of medical personnel. Of particular interest was the article of the Head of the General Administration of Medical Educational Institutions of Peoples' Commissariat of Healthcare of the USSR A.N. Shabanov, where the reforms of higher medical educations during the Great Patriotic War were discussed. These changes in many aspects and for many years determined the training of medical personnel in the Soviet Union, and then in Russia. *In 1944, a resolution of the Council of People's Commissars of the USSR was adopted about transition of medical institutes to a six-year education format starting from 1945.* At the same time, changes were introduced

in the curriculum, which reinforced the *importance of studying fundamental disciplines*. According to the new curriculum, after the second year, students took transfer exams in human anatomy, histology with embryology, biological chemistry and physiology. They were assumed to be the basis of mastering clinical disciplines.

Courses in diagnostics and special pathology and therapy, history of medicine were introduced, the number of academic hours for microbiology, nervous diseases, faculty therapy with a course of tuberculosis were increased, obligatory duty shifts were introduced for students in faculty clinics and in obstetrics and gynecology. Attention was paid to demonstration lectures, clinical and anatomical discussions, conferences. Two practices were introduced after the 4th year as subordinators in district and local hospitals and after the 5th year as doctors in city and district hospitals. Interestingly, in the last semester, elective lectures were supposed to be given on selected issues of physiology, pathological physiology and pathological anatomy.

In 1946, Professor G.B. Getsov described the transition of student training to a six-year course of study, an increase in the share of independent work of students, and the implementation of medical practice. In the article, it was recommended that, in accordance with the new curriculum, the practice be conducted in the summer so that students could be sent from the university hospitals to the 'periphery', which was shown on an example of II Moscow State Medical Institute, whose students were sent for practice to the Kalinin (Tver) and Ryazan regions [46].

## CONCLUSION

An analysis of the materials published in the journal 'Soviet Medicine' during the war years, allows us to draw several conclusions. The publications informed the medical community about the main tasks in healthcare and the government policy in this field. The articles contain important practical conclusions and recommendations from witnesses of events of the Great Patriotic War.

Thus, development of the therapeutic science continued during the Great Patriotic War. Publishing of 'Soviet Medicine' continued throughout the entire Great Patriotic War, although the number of issues decreased. This emphasized the attention of the government to education of doctors and researchers. The enormous work done by Soviet medical workers at that period made a contribution to understanding of the theoretical aspects of modern pathology. The issues directly associated with the wartime (sterilization methods, sanitary and epidemiological work), as well as the issues of therapeutic science, were discussed. Issues



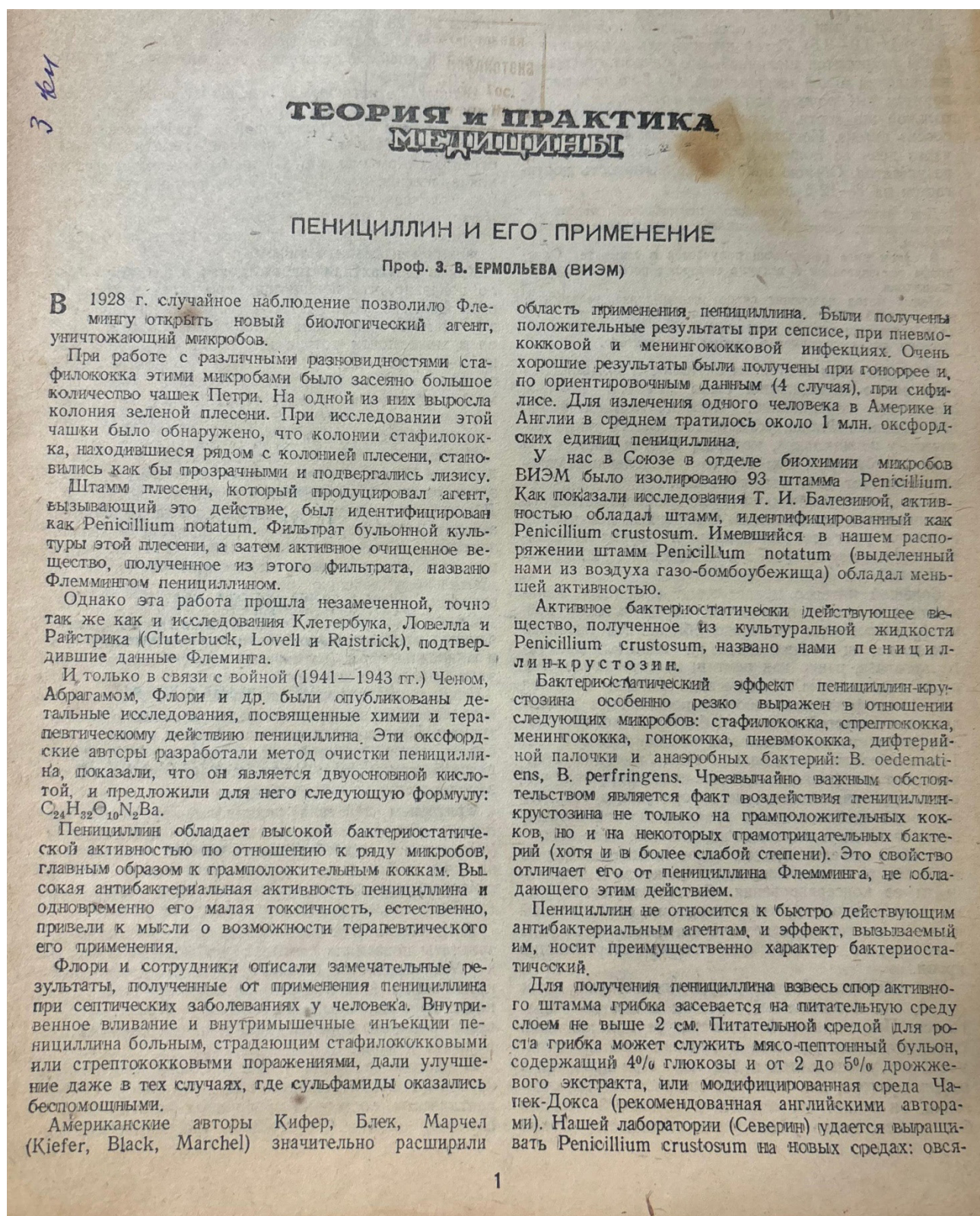


Fig. 2. A photo of the article by Z.V. Ermolyeva 'Penicillin and its Application' from the journal 'Soviet Medicine', No. 7-8, 1944.



concerning treatment of infectious diseases, were more urgent in the period of the Great Patriotic War with the underlying lack of antibacterial drugs. Of attention was a large block of internal diseases. Among the most frequently described pathologies were infectious diseases, respiratory pathology, cardiovascular diseases, diseases of gastrointestinal tract and kidney, tumors. The arsenal of drugs available to doctors at that time was seriously limited as compared to the present time; there was no understanding of the principles of evidence-based medicine when conducting research on new drugs, but at the same time, doctors and researchers laid a solid diagnostic foundation, approaches to identifying diseases, and non-medicinal therapy, which are still used today in many ways].

## ADDITIONAL INFORMATION

**Author contributions.** S.N. Kotlyarov — concept of the study, editing; E.V. Markova — selection and analysis of literary sources, writing the text. All authors approved the manuscript (the publication version), and also agreed to be responsible for all aspects of the work, ensuring proper consideration and resolution of issues related to the accuracy and integrity of any part of it.

**Ethics approval.** Not applicable.

**Funding sources.** No funding.

**Disclosure of interests.** The authors have no relationships, activities or interests for the last three years related with for-profit or not-for-profit third parties whose interests may be affected by the content of the article.

**Statement of originality.** The authors did not use previously published information (text, illustrations, data) when creating this work.

**Data availability statement.** The editorial policy regarding data sharing does not applicable to this work, and no new data were collected or created.

**Generative AI.** Generative AI technologies were not used for this article creation.

**Provenance and peer-review.** This work was submitted to the journal on its own initiative and reviewed according to the usual procedure. Two external reviewers, a member of the editorial board and the scientific editor of the publication participated in the review.

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