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Using 25% Solution of Dimethylsulfoxide in the Local Treatment of Purulent Diseases of Soft Tissues on an Outpatient Basis

Rakhmatov Shuhrat Sharofovich, Safoev Baqodir Barnoyevich, Qosimov Umed Usmonovich
Bukhara State Medical Institute

Annotation:

We studied the results of a study of 118 patients with purulent diseases of soft tissues on an outpatient basis. All examined patients, depending on the method of treatment, were divided into two groups: group I included 62 patients with purulent diseases of soft tissues, in which both general treatment was used antibiotic therapy and symptomatic therapy, and local treatment was used wound sanitation with a 25% solution of dimethyl sulfoxide with imposition Levomekol ointment under gauze bandages.Patients of the main group II (56) received surgical treatment of a purulent focus, debridement and application of wounds with 25% dimethylsulfoxide in combination with an electro activated aqueous solution (ESA).

The results of the study showed the use of 25% dimethyl sulfoxide in combination with an electroactivated aqueous solution (EAS) accelerates the cleansing and acute purulent diseases of soft healing of the wound process by 2-3 days and is a more economical, simple and convenient method of treating purulent wounds on an outpatient basis.

Keywords: soft tissue purulent disease wound, electroactive aqueous solution, dimethyl sulfoxide, purulent wound.

Relevance: Purulent diseases of soft tissues is one of the main difficult problems requiring solution in surgery. Up to 35-40% of all surgical patients are patients with tissues, the number of such patients increases over time [3; c. 253, 11; c. 468-472]. In many countries, there is no decrease in the rates of purulent-septic complications. Approximately 42% of deaths occur from aggravated pyoinflammatory processes [1; c. 51-59, 9; c. 133-136]. Currently, the treatment of wound infections is based on the use of antimicrobial drugs. But pathogenic bacteria, which are of great importance in the etiology of purulent surgical pathology, have a significant degree of pathogenicity, have biological variability and are antibiotic resistant. The currently available antibacterial substances do not give the desired result. [5; c. 592, 6; c. 240, 7; c. 15-17]. The problem of microflora resistance to antibiotics makes the fight against surgical infection much more difficult. The use of physicochemical methods in the treatment of purulent diseases of soft tissues is one of the most effective way to treat purulent diseases of soft tissues, in which the issues of the problem of microflora resistance are reduced. % dimethyl sulfoxide and the physical method of ultraviolet irradiation of wounds in two biodoses are a more effective way of treating purulent wounds. A solution of dimethyl sulfoxide and UFO acts not only as a powerful bactericidal, but also has resistance-suppressing properties. With their combined use, both a more effective bactericidal effect and resistive-suppressing properties are manifested. This expands the choice of antibiotics in the course of treatment [8; from 48-49. ten; s-126].We have sufficient experience in the use of a chemical preparation of 25% dimethyl sulfoxide solution in the treatment of purulent diseases of soft tissues. Positive results were obtained in the treatment of purulent diseases of soft tissues when using a 25% solution of dimethyl sulfoxide in combination with an electroactivated aqueous solution.A number of authors in their works give preference to the use of electrically

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activated aqueous solutions of EAR obtained by the STEL apparatus, in the treatment of purulent diseases of soft tissues of various etiology and nosology. [2; from 15.4; p. 54-56]. We used electroactivated aqueous solutions of anolyte and catholyte for the treatment of purulent diseases of soft tissues. To prepare an electroactivated aqueous solution, we used the apparatus "Espero-1", which was developed by NPF "Espero" in 1998 by domestic scientists, employees of the Tashkent Institute SredazNIIgaz S.A. Alyokhin. Bioelectroactivator of the Espero type is approved by the Pharmkomitet RUz for obtaining drugs used in clinical practice and was widely used by the staff of the VV Vakhidov Research Institute and the Tashkent State Medical Institute No. 2 clinics.The aim of the study was to determine the effectiveness of the use of 25% solution of radimethyl sulfoxide in combination with electrically activated aqueous solutions of anolyte and catholyte in the treatment of purulent diseases of soft tissues on an outpatient basis.

Material and methods: The results of a study of 118 patients with purulent diseases of soft tissues who received outpatient treatment at the base of the Bukhara State Medical Institute, family polyclinic No. 6 of the Bukhara City Medical Association 2018-2021 were studied. All examined patients, depending on the method of treatment, were divided into two groups: group I 62 patients with purulent diseases of soft tissues were included, who, as a local treatment, used wound sanitation with a 25% solution of dimethylsulfoccide with the application of levomecolp ointment under gauze bandages. Patients of the main group II (56) received surgical treatment of a purulent focus, debridement and application of wounds with 25% dimethylsulfoxide in combination with an electroactivated aqueous solution (EAR), levomekol ointment for dressings once a day. (Table 1).Table 1:Distribution of patients depending on the type of treatment

Groups of patients with soft tissue wounds	Treatment method: after surgical treatment
Comparison group Group I (n = 62)	**A** - Levomekol ointment for gauze bandage with 25% dimethyl sulfoxide solution
Main group Group II (n = 56)	**B** - 25% solution of dimethyl sulfoxide in combination with an electroactivated aqueous solution — EAR, Levomekol ointment for dressings.

Taking into account the antibacterial and reparative properties of EAR to the wound process, in the first phase of the wound, EAR-A was used in combination with a 25% solution of dimethylsulfoccide, levomekol ointment for dressings once a day,
"Electroactivated catholyte solution" EVR-K, with a 25% solution of dimethyl sulfoxide, levomekol ointment for bandages once a day was used in the treatment of the second phase of the wound of purulent-surgical diseases of soft tissues.

In the course of the study, the clinical efficacy of treatment methods was assessed using the dynamics of the level of laboratory indicators of endogenous intoxication (increased body temperature, the number of blood leukocytes, LII, ESR mm / h), the timing of wound cleansing and healing.

Results and discussion: Of 62 patients, comparison group I, 42 (67.7%) patients had purulent wounds after various purulent surgical diseases of soft tissues, such as phlegmon, abscess, suppurative hematoma, panaritium, mastitis, suppurative atheroma paraproctitis, suppurative epithelial-coccygeal cyst, and 20 (32.3%) - purulent postoperative wounds. All patients of the 1st group were admitted in the 1st phase of the wound process. On the day of treatment, patients with purulent diseases of soft tissues were prescribed complex treatment: antibiotic therapy,

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symptomatic therapy, and urgently performed surgical intervention. For the purpose of preoperative preparation, for a successful outcome of the surgical intervention, the patients were premedicated 20 minutes before the operation by administering 1 ml of 1% diphenhydramine solution and 2 ml of 50% analgin solution. After the expiration of the premedication period, patients under local infiltration anesthesia according to Vishnevsky 0.5% - 1% solution of novocaine in an amount of up to 40-60 ml, and in case of intolerance to novocaine - 2% lidocaine solution in an amount of 10-15 ml, a complete surgical treatment of the wound was carried out. The latter included opening a purulent focus, excision of non-viable tissues within healthy ones, additional treatment of the wound with antiseptic solutions: (hydrogen peroxide, furacilin solution), tamponing, which was also used in treatment tactics in patients of the comparison group. As a local treatment, wound sanitation with a 25% solution of dimethyl sulfoxide in combination with Levomekol ointment under aseptic gauze dressings was used once a day.The study of the dynamics of clinical and laboratory parameters in patients with purulent diseases of soft tissues of group I revealed the following:

Table 1: Dynamics of indicators of intoxication in patients with purulent diseases of soft tissues of group I (n = 62)

Indicators	Observation time					
	Admission day	Day 3	Day 5	Day 7	Day 10	Day 14
T^0 body	38,9±0,08	38,1±0,07***	37,8±0,09***	37,4±0,06**	37,1±0,05	36,4± 0,03
L blood $\times 10^9$/l	8,8±0,46	8,1±0,26**	7,9±0,32	7,4±0,29	7,1±0,33	6,8± 0,026
LII unit	2,5±0,13	2,2±0,06***	1,7±0,08 ***	1,2±0,04 ***	1,0±0,09	0,8±0,03
ESR mm / h	46,9±1,80	40,7±1,37***	32,4±1,72***	28,2±1,76***	21,,1±1,63***	16,6±1,8

Note: * - differences relative to the data of the previous day are significant (** - P <0.01, *** - P <0.001)

The above table 1 shows that on the day of treatment, all the average indicators of intoxication of patients were significantly higher than the norm. At the same time, body temperature averaged 38.9 ± 0.08 ° C, blood leukocytes 8.8 ± 0.46 × 109 / l, LII 2.5 ± 0.13 units, ESR 46.9 ± 1.80 mm / h. In the course of treatment, all these indicators tended to decrease by 3-5 days and thereafter. The indicator of body temperature for 5 days was 37.8 ± 0.090C, which in the subsequent 7-10 days of treatment approached the subfebrile condition of 37.4 ± 0.06 and 37.1 ± 0.05 0C, respectively.Of the examined 56 patients of the main group II, 46 (67.8%) patients had purulent wounds after various purulent surgical diseases of soft tissues, such as phlegmon, abscess, suppurative hematoma, panaritium, mastitis, suppurative atheroma, paraproctitis, suppurative epithelial-coccygeal cyst , and 22 (32.2%) - purulent postoperative wounds. As noted above, during the treatment of the examined group II patients with purulent diseases of soft tissues, taking into account the antibacterial and reparative properties of EAR, in the first phase of the wound, EAR-A was used in combination with a 25% solution of dimethylsulfoccide, levomekol ointment for dressings, and when the wound process passes into the second phase, EAR-K was used, in combination with a 25% solution of dimethylsulfoccide, levomekol ointment for dressings, The results of the analysis of indicators of intoxication of the body of patients with purulent soft tissue diseases of subgroup II are shown in Table 2.

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Dynamics of indicators of intoxication in patients with purulent diseases of soft tissues of group II (n = 56)

Indicators	Observation time					
	Admission day	3-day	5-day	7-day	10-day	14-day
t^0 body	38,8±0,1	38,2±0,09 ***	37,6±0,07 ***	37,2±0,05 ***	36,9±0,07	36,4±0,07
L-blood×10^9 /l	8,9± 0,24	8,2±0,27 **	7,7±0,31	7,3±0,28	7,0±0,22	6,6±0,21
LII unit	2,6± 0,13	2,1±0,06 **	1,6±0,08 ***	1,1±0,04 ***	1,0±0,06	0,8±0,04
ESR mm / h	46,7±1,91	39,8±1,47 **	31,2±1,66 ***	26,8±0,86 ***	19,7±0,32 ***	15,7±1,2

Note: * - differences relative to the data of the previous day are significant (* - P <0.05, ** - P <0.01, *** - P <0.001)

On the first day of treatment, the body temperature of the patients averaged 38.8 ± 0.01 ºC. The content of blood leukocytes was on average 8.9 ± 0.24 x 109 / l. Similarly, there was an increase in LII and ESR indicators to the level of 2.6 ± 0.13 and 46.7 ± 1.91 mm / h, respectively.Against the background of complex treatment with the use of local surgical treatment of wounds with EAR-A, on the third day of treatment, there was a slight decrease in these indicators of body temperature from 38.2 ± 0.09 to 37.6 ± 0.08 ºC, blood leukocytes decreased on average to 7.5 ± 0.34 • 109 / l. There was a decrease in LII and ESR indicators to 2.0 ± 0.08 units. and 37.6 ± 1.67, respectively. On the 9-10th day of treatment, all of the above indicators were much closer to the normal values of the indicators, and within the normal range by the 13-14th day of treatment.It should be noted that, as in the previous group of patients, of the analyzed indicators of the degree of intoxication of the body, blood ESR normalized later than others, only by 14-15 days of treatment.

Dynamic control of the level of microbial contamination of purulent wounds in the analyzed group revealed the following: at the time of admission, the microbial contamination of the wound was comparable to the first group and amounted to 107-108 mt / g, after surgical treatment of the wound and topical application of a 25% dimethyl sulfoxide solution, it decreased by 4 orders of magnitude , in the course of treatment, its further decrease was noted, and already by 6-7 days of treatment in both groups, the microbial contamination of the wound was at and below the critical level, at the same time amounting to 103 mt / g - 102 mt / g of tissue. The use of a 25% solution of dimethyl sulfoxide in combination with EAR-A and EAR-K in the treatment of purulent wounds in the complex treatment of patients in group II contributed to the complete cleansing of wounds from infection by 4.5 ± 0.5 days of treatment. By 4.0 ± 0.5 days, active resorption of the infiltrate around the wound was observed. The beginning of the appearance of granulations was noted by 6.0 ± 0.5 days of treatment, and epithelialization by 8.5 ± 0.8 days of treatment.

Comparative assessment of the timing of cleansing and wound healing in patients of I-II groups revealed the following: all indicators of the timing of cleansing and healing in patients of group 2 were on average 2-3 days ahead of the control groups Table № 3

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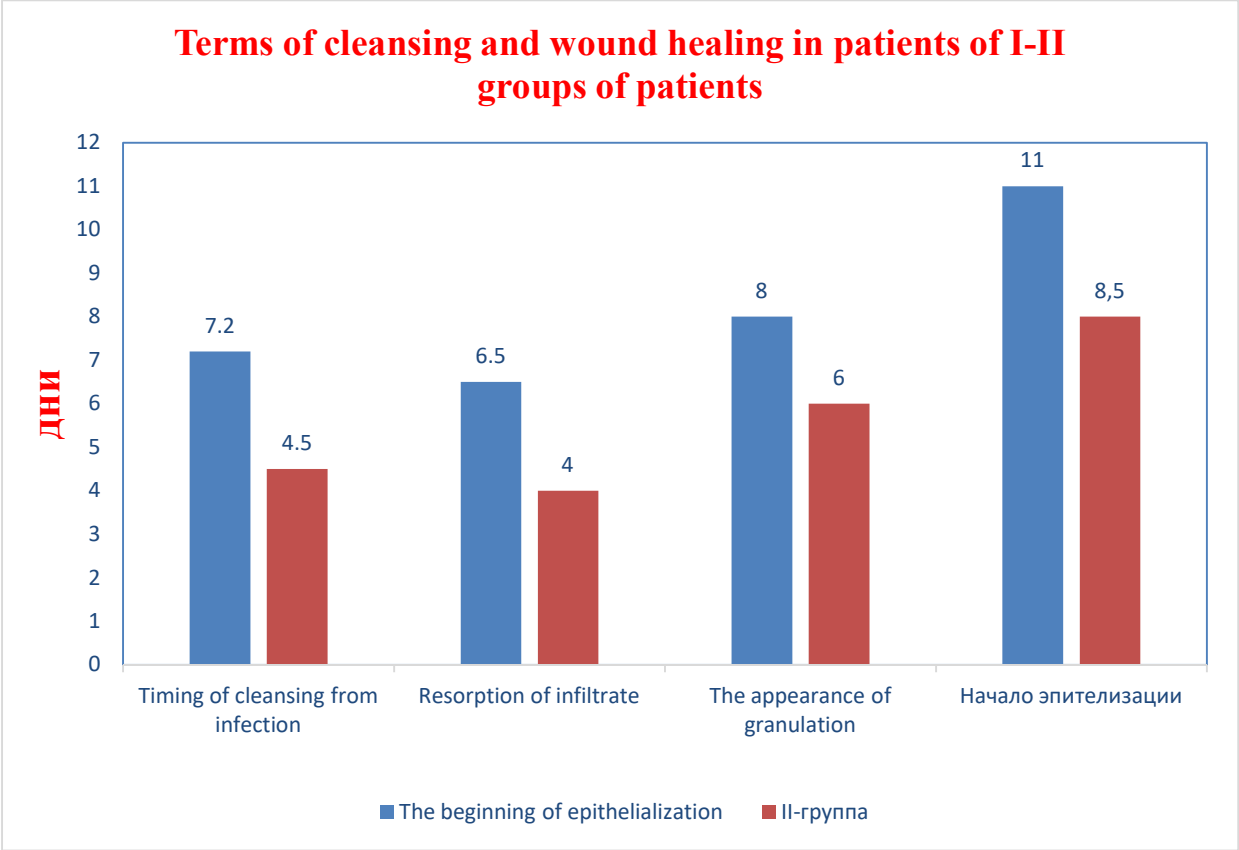
Comparative assessment of the timing of cleansing and wound healing in patients Groups I-II (Day).

№	indicators	I group	II group
1	Timing of cleansing from infection	7,2±0,6	4,5±0,5
2	Resorption of infiltrate	6,5±0,4	4,0±0,3
3	The appearance of granulation	8,0±0,5	6,0±,0,5
4	The beginning of epithelialization	11,0±1,5	8,5±0,8



Thus, our study showed physicochemical methods of treating patients using a 25% solution of dimethyl sulfoxide in combination with EAR-A and EAR-K is an effective way to treat purulent soft tissue disease on an outpatient basis.

Conclusions

1. The use of a 25% solution of dimethyl sulfoxide in the complex treatment of purulent wounds effectively affects the healing of the wound process.

2. The use of a 25% solution of dimethyl sulfoxide in combination with an electroactivated solution (EAS) improves the process of local treatment of purulent wounds.

3. The use of a 25% solution of dimethylsulfoccide in combination with an electro-activated solution of EAR-A and EAR-K is an effective, simple, convenient and economical way of physicochemical method for treating purulent wounds on an outpatient basis.

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REFERENCES:

1. Blatun L.A. Local drug treatment Problems and new opportunities for their solution // Consiliummedicum. Surgery. - 2007. - No. 1. - S. 51-59.
2. Gridin A.A. The use of electroactivated aqueous solutions in the treatment of patients with purulent wounds: Ph.D. thesis abstract. honey. sciences. - Voronezh, 2005 .-- 15 p.
3. Koreyba K.A., Gaziev A.R. Surgical infections of the skin and soft tissues. Treatment of long-term non-healing wounds: monograph. - Kazan: Fatherland, 2011 .-- 253 p.
4. Koshelev P.I. Treatment of purulent wounds using anolyte and catholyte / P.I.Koshelev, K.M. Reznikov, AA Gridin // System analysis and management in biomedical systems. - M, 2005.- T.4, No. 1.-P.54-56
5. Kuzin M.I., Kostyuchenok B.M. Wounds and wound infection. - M .: "Book on demand", Medicine, 2012. - 592 p.
6. Karimov Sh.I., Babadjanov B.D., Islamov M.S. Diabetic gangrene of the lower extremities. - T .: "Shark". 2003 .-- 240s
7. Mitrofanov V.N., O.P. Zhivtsov. Treatment of purulent wounds using physical methods. FGPU Nizhny Novgorod Research Institute of Traumatology and Orthopedics // Medial. - 2013. - No. 4. -C. 15-17.
8. Boltaev T.Sh. Safoev B. B. Borisov I.B. " Combined physical and chemical method of treatment of purulent wounds of soft tissues "(Clinical and experimental research) Dissertation of Doctor of Philosophy (PhD) in medical sciences. 2020; 48-49 p.
9. Yakovlev S.V. Hospital infections caused by gram-negative microorganisms: clinical significance and modern therapy options. Infections and antimicrobial therapy. - 2007. - No. 6. - S. 133-136.
10. Yarkulov Sh.Sh. Safoev B.B. "Ways to reduce the resistance of microflora to antibiotics in the treatment of purulent wounds": abstract, candidate of medical sciences. -Bukhara, 2021. -from 126.
11. Proud D. F., Bruscino Raiola, D. Holden, E. Paul, R. Capstick, A. Khoo. Are we getting necrotizing soft tissue infections right? A 10 - year review. // ANZ J Surg. - 2014 .-- 84 (6). - P. 468–472 doi: 10.1111 / ans.12412.
12. NA Narzieva, N Hasanova. Communicative competence as a pedagogical model in the classrooms// ACADEMICIA: An international Multidisciplinary Research Journal 10(6),78-81, 2020
13. NA Narzieva. The concept of defined target technologies and their role in the educational process// Theoretical &Applied science, 356-360, 2020
14. AD Ahmedovna, Narziyeva N.A, Main styles and methods of teaching speaking foreign languages to medical institutes , International Engineering Journal for research and development 6 (SP), 4-4, 2021
15. NN Narzieva, Development of Education and Research Activity Profile Class Students on the Basis of Integrative and Personal Approach, www. auris-verlag, 2017
16. NN Narzieva Development of Education and Research Activity Profile Class Students on the Basis of Integrative and Personal Approach, www.auris-verlag. de, 2017
17. NN Atakulovna Factors supporting teaching and learning English in non-English speaking countries, ResearchJet Journal of Analysis and inventions 2(06), 297-305, 2021
18. Abdullayeva M.A., Abdurakhmonov M.M. Congenital risk factors in uzbek population with nonspecific aortoarteriitis// European science review. Austria. - 2018. - №11-12. - P. 51-53.

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