

THE USE OF CHEMICAL PREPARATION OF DIMETHYL SULFOXIDE IN COMBINATION WITH THE PHYSICAL METHOD IN TREATMENT OF PURIOUS SOFT TISSUES

Safoev B.B., Boltaev T.Sh.,

Bukhara State Medical Institute.

✓ Resume,

The study involved 90 patients on a clinical basis Bukhara State Medical Institute in the two groups, which were compared with purulent soft tissue diseases, showed optimum performance when compared with traditional methods. Our method of application in the treatment of purulent-necrotic processes of soft tissues with ultraviolet irradiation of the wound in combination with sanitation of purulent wounds with a 25% solution of Dimexidus accelerated the healing phases and reduced the time of hospital stay by 1.5-2 days.

Key words: soft tissues, purulent wounds, infections, dimexide, ultraviolet radiation.

ЮМШОҚ ТЎҚИМАЛАРНИНГ ЙИРИНГЛИ КАСАЛЛИКЛАРДА КИМЁВИЙ ВОСИТА ДИМЕТИЛСУЛЬФОКСИД ВА ФИЗИКАВИЙ УСУЛИ БИЛАН БИРГАЛИКДА ҚЎЛЛАШ УСУЛИ

Сафоев Б.Б., Болтаев Т.Ш.,

Бухоро давлат тиббиёт институти.

✓ Резюме,

Бухоро давлат тиббиёт институтининг клиник базасида 90 нафар беморлар текширувдан ўтқазилди. Барча беморлар шартли равишда икки гуруҳга ажратилди. I-гуруҳ 58 нафар беморда ананавий даво чоралари қўлланилди. II-гуруҳ 32 нафар беморда маҳаллий физико-химик даволаш усуллари 25%ли Димексид эритмаси ва УБНни жароҳатга комплекс равишда қўлланди. Олинган натижаларни таққослаб кўрилганда биохимик кўрсаткичлар, жароҳатни битиши ва кузатув олиб борилаётган иккинчи гуруҳда юмшоқ тўқималарнинг йирингли касалликларини даволашда физико-химик даволаш усулини ананавий усулга нисбатан самарадорлиги намойён бўлди. Ишлаб чиқилган ушбу метод шуни кўрсатдики, юмшоқ тўқималарнинг йирингли жараёнларида жароҳатни 25%ли Димексид эритмаси билан биргаликда ультрафиолет нурлар билан нурлантирилганда жароҳатни битиши тезлашди ва беморларни стационарда даволаниши 1,5-2 кунга қисқаргани кузатилди.

Калит сўзлар: юмшоқ тўқима, йирингли жароҳат, инфекция, димексид, ультрафиолет нурланиш.

ПРИМЕНЕНИЕ ХИМИЧЕСКОГО ПРЕПАРАТА ДИМЕТИЛСУЛЬФОКСИДА В СОЧЕТАНИЕ С ФИЗИЧЕСКИМ МЕТОДОМ ПРИ ЛЕЧЕНИИ ГНОЙНЫХ РАН МЯГКИХ ТКАНЕЙ

Сафоев Б.Б., Болтаев Т.Ш.,

Бухарский государственный медицинский институт.

✓ Резюме,

Обследовано 90 больных на клинической базе Бухарского Государственного медицинского института в двух группах, которым выполнен сравнительный анализ динамики биохимических показателей, скорости очищения, заживления ран и сроком пребывания на стационарном лечении с гнойными заболеваниями мягких тканей, показал оптимальную эффективность по сравнению с традиционными методами. Разработанный нами метод применения в комплексе лечения гнойно-некротических процессах мягких тканей ультрафиолетовым облучением раны в сочетании с санацией гнойных ран 25% раствором Димексиды ускорило течение фаз заживления и сократило время стационарного пребывания на 1,5-2 суток.

Ключевые слова: мягкие ткани, гнойные раны, инфекции, димексид, ультрафиолетовое облучение.

Relevance

Attraction of purulent wounds of soft tissues remains the main problem of surgery - the development of purulent-septic complications. [1, 5]. This problem is urgent, despite the successes of numerous studies on the introduction of high technologies used in the treatment of patients [2]. With a high incidence rate, with high material costs, this problem is advancing into the category of socio-economic [1, 5, 6]. Wound infection, including postoperative infection, continues to be one of the most pressing problems in surgery. The number of patients with wound infection, including postoperative, is 35-40% of all surgical patients. About 42% of deaths after surgical interventions are associated with purulent-inflammatory

complications [4, 7]. When analyzing the scientific literature, we did not meet studies on the combined treatment of purulent wounds of soft tissues using chemical exposure to a 25% solution of dimexide and the physical method of exposure to ultraviolet irradiation of wounds. When analyzing the scientific literature, we did not meet studies on the combined treatment of purulent wounds of soft tissues using chemical exposure to a 25% solution of dimexide and the physical method of exposure to ultraviolet irradiation of wounds. Our research is dedicated to this.

The purpose of this study: determining the effectiveness of the chemical method of using dimethyl sulfoxide in combination with the physical method to improve the results of treatment of purulent diseases of soft tissues.

Materials and methods

The results of examination and treatment of 90 patients with purulent soft tissue wounds of various etiologies, who were admitted to the purulent surgical department of the clinical base of the Bukhara State Medical Institute in 2012-19, were analyzed.

In accordance with the objectives of the study, all patients are conditionally divided into 2 groups. Of the 90 examined patients, group I included 58 patients with purulent diseases of the soft tissues (control group). Of these, 27 (46.5%) patients had purulent complications of postoperative wounds. In 31 (53.5%) patients there were various purulent diseases of the soft tissues. All patients were admitted to the clinic in the first phase of the wound healing process.

In the first group of patients, water-soluble ointments under a dressing were used as a traditional treatment method during treatment.

The general condition of patients with purulent diseases of the soft tissues in most cases upon admission was relatively satisfactory. All of them complained of general weakness, malaise, fever up to 39.50C, sleep disturbances and lack of appetite. Of the local symptoms, moderate or severe hyperemia of the skin and swelling of the tissues were noted. Re-determined deep painful infiltration. In patients with postoperative purulent complications, removal of sutures from the wound appeared abundant purulent discharge. More than 95% of patients were admitted within 3 to 10 days after surgery. As was noted above, in 31 patients of the control group, purulent diseases of soft tissues of various localization were noted. Soft tissue abscess 15 (48%), phlegmon in 6 (19%), adenoflegmon in 4 (13%) patients, phlegmonous-gangrenous forms of erysipelas in 2 (7%) cases, mastitis occurred in 4 (13%) patients.

All patients with purulent diseases of the soft tissues on the day of admission on an emergency basis underwent surgery to open and debride the purulent cavity with antiseptic solutions. More than 75% of operations were performed under intravenous pain management. It should be noted that the further therapeutic tactics of patients with both postoperative purulent wounds and purulent diseases of the soft tissues was similar. After the basic principles of the treatment of purulent wounds and antibiotic therapy, taking into account the sensitivity of the flora, the local use of Levomekol water-soluble ointment with bandages was also carried out.

In the II group of the examined 32 patients were with purulent soft tissue diseases without concomitant diseases. Of these, 12 (37.5%) patients with purulent wounds, 20 (62.5%) patients with various purulent surgical diseases of soft tissues.

For these patients, the traditional method was supplemented by daily topical application of combined treatment with the methods of ultraviolet irradiation with a mercury-quartz lamp in 2 biodoses (Dalfeld-Gorbachev), which have an immunostimulating effect, bactericidal and anti-inflammatory effect, stimulate cell division activity, desensitizing and general strengthening effect. In combination with a 25% solution of Dimexide (dimethyl sulfoxide), which has an anti-inflammatory and pronounced local anesthetic property, exhibits bactericidal properties, serves as an inhibitor of free radical reactions in tissues, enhances the penetration of drugs through the

skin, changes the sensitivity of microflora, and resistance to antibiotics.

Results and their discussion

One of the characteristic criteria for assessing the wound healing process was the determination of dynamic control of the analysis of the results of the level of intoxication index of the patient with soft tissue soft tissue diseases of the first group: the first day of treatment the patient's body temperature averaged $38.50C \pm 0.4$. The content of blood leukocytes was equal to an average of $10 \pm 0.5 \times 10^9 \text{ l}$. The volume of medium molecules averaged 0.190 ± 0.017 units. Similarly, an increase in LII and ESR to 2.4 ± 0.13 and 45 ± 2.4 , respectively, was noted.

An increased level of MSM, L, LII and ESR indicates pronounced end toxemia in this category of patients.

On the third day of treatment, there was a slight decrease in these body temperature indicators from 38.5 to 37.8 ± 0.3 .

Blood leukocytes decreased on average to $9.2 \pm 0.6 \times 10^9 \text{ l}$. The volume of medium molecules averaged 0.162 ± 0.019 units. Similarly, there was a decrease in LII and ESR to 1.9 ± 0.17 and 38.2 ± 3.1 , respectively. By the fifth day of treatment in the examined patients of the control group with purulent diseases of the soft tissues, a slight subfebrile condition of $37.2 \pm 0.50C$ remained. At the same time, according to indicators of body intoxication: MSM, L, LII and ESR of the blood, their further decrease was noted, that is, there was a trend towards normalization of 0.154 ± 0.014 units; $7.4 \pm 0.4 \times 10^9 \text{ l}$; 1.7 ± 0.11 ; 32.3 ± 2.5 .

By the seventh day of treatment, these figures, although they had a tendency to further decrease, however, remained above the norm.

With further treatment and observation by the tenth day, all the analyzed intoxication indicators except blood ESR were within normal limits.

In patients of the analyzed group I, wound cleansing from infection occurred on average 5 days. By the third day, resorption of infiltrative processes in the wound was noted. The beginning of the appearance of granulation was noted on average by six days. These data are confirmed by cytological studies. So, on the third day, a large number of destructively and degenerative altered leukocytes with a predominantly incomplete and perverse type of phagocytosis was determined in cytological preparations.

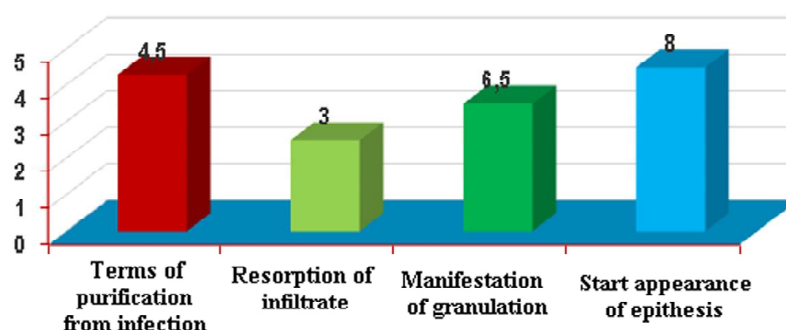
On the fifth day, the cytological picture was mostly inflammatory and inflammatory-regenerative in nature, and only by the seventh day the predominantly regenerative type of cytograms was ascertained:

Thus, the analysis of the obtained results of patients with purulent diseases of soft tissues, taking into account the requirements of today, is unsatisfactory, i.e. indicators of the main evaluation criteria and dynamics of the wound process - late cleansing of the wound from infection (only by 5 days of treatment), the beginning of the appearance of granulation by 6-7 days of treatment, the beginning of the appearance of epithelization by 8-9 days of treatment, and also insufficient correction of oxygen saturation of the wound tissues by The 10th day of treatment remains to be desired.

All patients of group II were also admitted to the clinic of the first phase of the wound healing process.

All patients with purulent diseases of the soft tissues on the day of admission underwent urgent surgery to open the purulent focus and, as a local treatment, additionally applied a combination of ultraviolet irradiation and

Duration of purification and healing in patients of group I with purulent-necrotic diseases (n=58)



sanitation of the purulent cavity with an antiseptic 25% Dimexidum solution followed by the application of Levomekol ointment and an additional aseptic dressing dipped in 25% Dimexidum solution.

The results of studying intoxication indicators and the species composition of microbes scattered from the exudate of infected wounds in patients with purulent diseases of the soft tissues of group II reflect the following: against the background of complex treatment of patients of group II by 3 days, the pH of the wound medium was 4.9 ± 0.3 , i.e., a shift to the neutral side was noted. There was a decrease in the area of the wound surface on average by $2.5 \pm 0.6\%$ on the third day. The protein content in wound exudates decreased on average to 52.8 ± 2.2 g / l. Recalculation of PC revealed an average increase to 1.2 ± 0.03 units. On the fifth day of treatment, the pH of the wound medium was closer to the neutral medium 6.0 ± 0.4 . The daily percentage reduction in the area of the wound surface averaged $3.5 \pm 0.4\%$. Protein of wound exudates

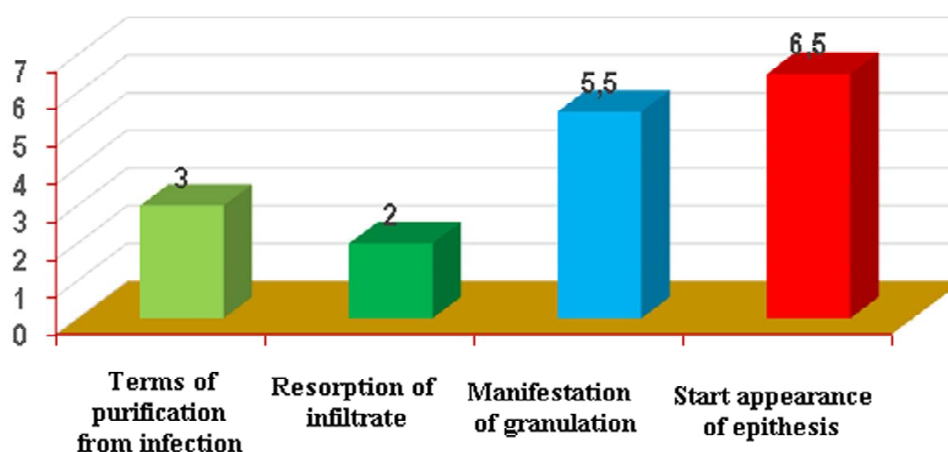
decreased on average 46.2 ± 2.0 g / l. Moreover, the PC according to M.F. Mazurik was equal to 1.6 ± 0.03 units.

On the fifth day of treatment, the pH of the wound medium was closer to the neutral medium 6.0 ± 0.4 . The daily percentage reduction in the area of the wound surface averaged 3.8 ± 0.5 . By 9-10 days of treatment, the pH of the wound surface had a stable neutral value. The decrease in the area of the wound surface reached an average of $4.0 \pm 0.4\%$.

The local combination of ultraviolet radiation and wound debridement with a 25% Dimexidum solution in the treatment of purulent diseases of the soft tissues of the body contributed to the complete cleansing of the wound from infection by 2-3 days from the start of treatment. By the second day, active resorption of the infiltrate around the wound was observed. The onset of granulation was noted at 4 days of treatment, and epithelization at 5 days:

Figure 2.

Terms of cleansing and healing of wounds in patients of group II purulent-necrotic diseases of the soft tissues (n=32)



A comparative analysis of indicators of group I, treated under dressings with levomekol ointment, and in group II, where physical and chemical methods of local exposure to ultraviolet radiation in appropriate biodoses and wound sanitation with 25% Dimexidum solution were used in the treatment of purulent wounds, revealed a significant advance in their improvement in II group for 1.5-2 days than in group I.

Thus, a comparative analysis of the dynamics of biochemical parameters of the rate of wound cleansing and healing in patients with purulent diseases of soft tissues of group I-II revealed the following: the use of ultraviolet radiation for local treatment in appropriate biodoses in combination with a 25% Dimexidum solution in the treatment complex is the best effective method. The average duration of treatment of patients of group II was 5.8 ± 0.3 days.

Conclusion

1. The developed method of application in the complex of treatment of purulent-necrotic processes of soft tissues with ultraviolet irradiation of the wound and sanitation of the purulent wound with a 25% Dimexidum solution showed that the combined use of these methods is an effective treatment method.

2. The combined use of physicochemical methods using ultraviolet radiation (UV) and a 25% solution of dimexide in the treatment of purulent-surgical diseases of the soft tissues reduces the average hospital stay by 1.5-2 days. This method has economic efficiency.

3. This allows us to recommend the presented method for widespread use in surgical departments.

LIST OF USED LITERATURE:

1. Абаев Ю.К. Справочник хирурга. Раны и раневая инфекция / Ростов на Дону: Феникс, 2006; 427.
2. Бейзеров Ю.М. Хирургическое лечение ран: современные подходы / Бейзеров Ю.М. [и др.] // Хирургия Восточная Европа. - 2012; 3: 286-287.
3. Болтаев Т.Ш., Сафоев Б.Б., Ярикулов Ш.Ш., Хасанов А.Қ. Сочетанное применение раствора демиксида и местного УФО раны при лечении гнойных заболеваний мягких тканей // Тиббиётда янги кун. - 2018; 2(22): 124-133. http://bsmi.uz/images/material_2019/yanvar/jurnal/jurnal-2-2018.pdf
4. Корейба К.А., Газиев А.Р. Хирургические инфекционные поражения кожи и мягких тканей. Лечение длительно незаживающих ран: моногр. - Казань: Отечество, 2011; 253.
5. Мохова О.С. К вопросу регионального лечения гнойных ран / Мохова О.С., Остроушко А.П.// Научное обозрение: медицинские науки -2016; 5: 72-74.
6. Савельев В.С. Клиническая хирургия. Национальное руководство в 3-х томах / В.С. Савельев [и др.] // - М.: Гэотар-Медиа, 2008; 1: 858.
7. 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 Jun; 84(6): 468-72 doi: 10.1111/ans.12412.

Поступила 09.02. 2020