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THE USE OF AN ABACAL MEDIUM IN THE COMPLEX TREATMENT OF PATIENTS WITH PURULENT SURGICAL DISEASES OF THE HAND

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ABSTRACT:

The relevance of this topic is due to the predominant lesion of the functionally active right upper limb, as well as the unsatisfactory organization of surgical care at the pre-inpatient stage of treatment. According to some modern data, the frequency of panaritium and phlegmon of the hand ranges from 15 - 18% to 20 - 30%.

Keywords: purulent diseases of the hand, Dimexide, abacterial environment.

INTRODUCTION:

In modern surgical practice, acute purulent-inflammatory diseases of the hand occupy one of the leading places, both in terms of frequency of occurrence and in terms of the total number of patients' disability [5, 6, and 7]. Among all suppurative processes of soft tissues and bones in patients who first applied for surgical help, the proportion of purulent diseases of the hand is, according to modern Russian and foreign authors, from 8 to 30% [10]. Purulent-inflammatory diseases of the upper limb are a serious medical and social problem. The relevance of this topic is due to the predominant lesion of the functionally active right upper limb, as well as the unsatisfactory organization of surgical care at the pre-inpatient stage of treatment. Acute purulent diseases of the hand in surgical practice occupy one of the leading places [1, 4]. According to some authors, the frequency of panaritium and phlegmon of the hand ranges from 15 - 18% to 20 - 30%. Of great importance in the development of purulent infection, in addition to microtrauma, is the bacterial flora of the hands. It is changeable depending on the conditions of the external environment, profession and specific types of work. According to the general opinion of researchers, the causative agent of purulent infection of the hand is most often staphylococcus aureus. Along with dysfunction of fingers and hand, the listed features of the course of the pathological process in purulent diseases of the hand sharply reduce the efficiency and quality of professional activity in persons of “dangerous” professions associated with physical labor [9, 10]. The constant increase in requirements for the quality of training, physical condition and functional state of patients, in cases of the development of suppurative diseases of the extremities and the incapacitation of these patients, dictates the need for their timely adequate surgical and drug correction, as well as early full rehabilitation. Among all suppurative processes of soft tissues and bones, purulent diseases of the hand rank first, accounting for up to 15% of all patients who first applied to a surgeon [2,4,5]. Additional methods of physical impact on wound infection, such as laser

irradiation, treatment in an abacterial environment, the use of vacuum and hydro-vacuum treatment of wounds, hyperbaric oxygenation and other isolated methods are not always effective enough, require very expensive equipment and trained specialists, which limits them widespread use [3,8].

ANALYSIS:

To increase the sensitivity of microorganisms to antibacterial drugs, a solution of dimexide (dimethyl sulfoxide, DMSO) is traditionally used, which has a bacteriostatic and bactericidal effect. Dimexide, in addition to bacteriostatic, and for a number of bacteria and bactericidal action, has the ability to increase the sensitivity of microorganisms to antibacterial drugs [3,9]. He is able to carry out transcutaneous drugs, create their depot in tissues and is used as part of local antibacterial therapy. Already modern studies have proven its antiadhesive activity, the ability to reduce the virulence factors of staphylococcus and Pseudomonas aeruginosa and inhibit the formation of biofilms [2,3,8,9].

OBJECTIVE OF THE STUDY:

To improve the results of treatment of patients with purulent surgical diseases of the hand by using an abacterial environment on an outpatient basis.

MATERIALS AND METHODS:

The analysis of the results of treatment of 62 patients with acute purulent surgical diseases of the hand of various etiology, who were admitted to the surgical clinic of the Bukhara State Medical Institute, was carried out. The patients were conditionally divided into 2 groups. The I-st group of comparison included 33 patients who used the traditional method of treatment, which included surgical treatment of a purulent focus followed by debridement of the wound with 25% Dimexidum solution. Systemic antibiotic therapy was also carried out, taking into account the sensitivity of micro flora secreted from wounds, detoxification therapy and symptomatic treatment. In the second (main) group, 29 patients additionally, in accordance with the objectives of the study, were additionally exposed to the a bacterial environment of the purulent focus for 8 hours 2 t In group I, out of 33 (42.3%) patients, there were purulent diseases of the hand in the form of thenar phlegmon 7 (21.2%), hypotonic phlegmon 8 (24.2%), phlegmon of the median palmar space (supra-subgonal) 3 (9.1 %), commissural phlegmon (callus abscess) 10 (30.3%), cross (U-shaped phlegmon) 2 (6.1%), phlegmon of the back of the hand (supra-subgoneurotic) 3 (9.1%), after various etiological factors picture 1:

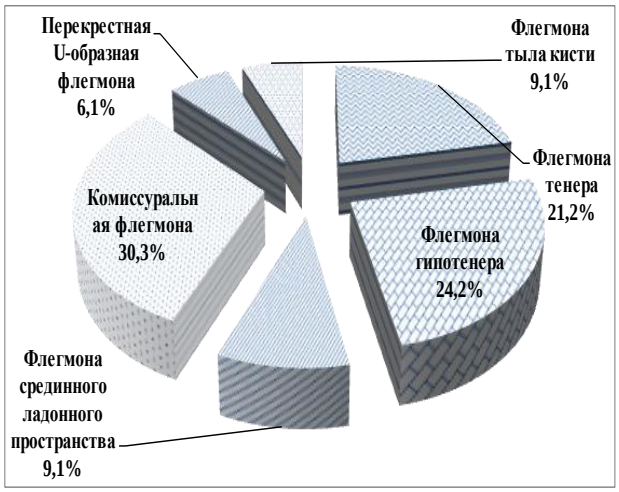

Fig. 1. Variety of purulent surgical hand diseases in patients of group I (n = 33)

In 29 (41.4%) patients of group II, there were purulent diseases of the hand in the form of phlegmon thenar 9 (31.1%), phlegmon of the hypotenar 6 (20.7%), phlegmon of the median palmar space (suprapaneurotic) 2 (6.9%)), commissural phlegmon (callus abscess) 9 (31.1%), cross (U-shaped phlegmon, phlegmon of the back of the hand (supra-subgoneurotic) 1 (3.4%), furuncle (carbuncle)

of the back of the hand 2 (6.7%) after various etiological factors Figure 2:

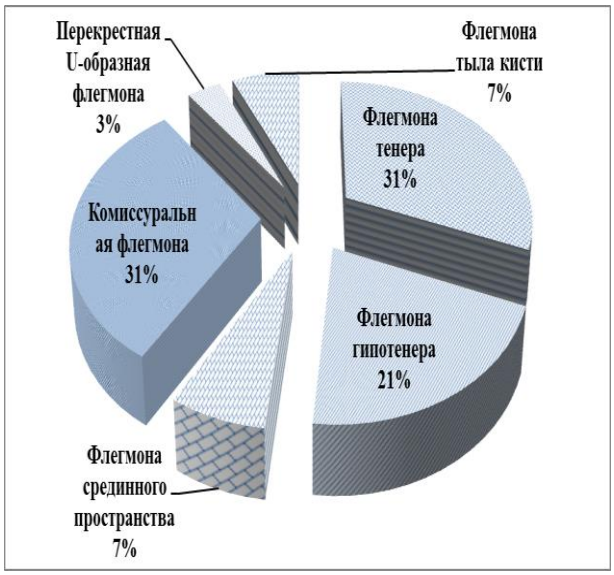

Fig. 2. Variety of purulent surgical hand diseases in patients of group II (n = 29).An important characteristic criterion for assessing the wound process was the identification of the amount of microbial contamination, the determination of the species composition of the microflora. The identified species composition of microflora sown from the exudate of infected wounds in patients with purulent surgical diseases of the hand is shown in figure 3:

Fig. 3. Species composition of microflora, seeded from their exudate infected wounds of patients with purulent surgical diseases of the hand (n = 62).In most cases, 29 patients were inoculated with pathogenic staphylococcus, of which 12 (19.3%) in the form of monoculture and 17 (27.4%) in associations. In 23 cases, E. coli was sown, which in 9 (14.5%) cases was present as a monoculture and in 14 (22.5%) cases as part of microbial associations. Proteus was next in frequency of detection - 13 observations, seeded in 6 (9.6%) cases as a monoculture and in 7 (11.2%) cases as part of microbial associations. This was followed by enterococci found in 12 cases, 6 (9.6%) in the form of monoculture and associations, respectively, streptococci in 5 cases, 3 (4.8%) - monocultures and 2 (3.2%) in associations. Pseudomonas aeruginosa was inoculated in 1 (1.6%) patient as a monoculture and in 1 (1.6%) as part of microbial associations. In patients of both groups, the indicators of the qualitative and quantitative analysis of the microflora of wounds in dynamics, the degree of intoxication, the timing of cleansing and healing of wounds were studied.

RESULTS AND ITS DISCUSSION:

Comparison group I included 33 patients with acute purulent surgical diseases of the hand. All patients on admission had symptoms of general intoxication - mild and moderate severity. In parallel with the general symptoms, local manifestations of the inflammatory process were noted - hyperemia, edema and tissue infiltration in the wound area. More than 85% of patients were admitted within 2 to 6 days after the onset of the disease.

Analysis of the results of indicators of intoxication of the body of patients with purulent surgical diseases of the hand of the 1st comparison group revealed the following changes (Table 1). As can be seen from the table, on the first day of treatment, the body temperature of patients averaged 39.1□0.290C. The content of leukocytes in the blood was on average 10.1□0.51 x 109 / l. The volume of medium molecules averaged 0.216 - 0.011 units. Similarly, an increase in LII and ESR was noted.

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

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

The following criteria for assessing the dynamics of the wound process in patients were the pH of the wound environment, the percentage of reduction in the area of the

wound surface, and PC indicators according to MF Mazurik (Table 2).

Dynamics of biochemical parameters and rate of wound healing in patients of the 1st comparison group (n = 33)

Indicators	Время наблюдения				
	1 day	3 day	5 day	7 day	9-10 day
pH of the wound environment	4,3±0,14	4,6±0,11	5,4±0,16***	5,8±0,27	6,9±0,29***
Percentage reduction in wound surface area	0	1,2±0,04***	2,4±0,03***	2,9±0,16***	3,4±0,17
Wound exudate protein (g / l)	59,6±1,64	57,1±1,49	48,1±1,28***	44,7±1,14	-
Total blood protein (g / l)	62,7±2,39	66,2±1,74	69,6±1,74	71,3±1,66	74,5±3,43
PC according to M.F. Mazurik	0,9±0,03	1,2±0,04**	1,3±0,05***	1,5±0,04*	-

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

Only by the tenth day of treatment did the pH of the wound environment become neutral. The decrease in the area of the wound surface per day became equal to 3.4 ± 0.17%. The release of exudate from the wound has ceased, which, in our opinion, is due to the transition of the wound process from the 1st to the 2nd phase.

Thus, in the patients of the comparison group, the wound was cleared of infection only by day 5.5, the beginning of the appearance of granulations - by the 7th day, the beginning of epithelialization - by the 10th day. Biochemical parameters of wound exudate are normalized only by the 10th day of treatment.

With the traditional method of treating patients of group, I with purulent surgical diseases of the hand, the average duration of outpatient treatment was 13.5 + -0.8 days.

Table 3. Dynamics of indicators of intoxication in patients with purulent surgical diseases of the hand of group II (n = 29)

Indicators	Time of observation				
	День поступления	3-day	5-day	7-day	10-day
t^0 body	38,9±0,08	37,3±0,07***	36,7±0,08***	36,6±0,08	36,5±0,09
L-blood· 10^9/l	9,8±0,38	7,0±0,32***	6,2±0,34*	5,6±0,18	5,7±0,26
МСМ ед	0,218±0,012	0,121±0,007***	0,093±0,004*	0,082±0,004***	0,072±0,005
ЛИИ ед	2,7±0,14	1,3±0,07***	0,9±0,05***	0,7±0,03	0,5±0,04***
СОЭ мм/ч	49,8±2,24	28,5±1,4***	18,4±0,85***	11,6±0,44***	6±0,34***

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

Dynamic control of the pH of the wound environment, the percentage of reduction of the wound surface and indicators of PK protein according to MF Mazurik revealed the following (Table 4).

Table 4. Dynamics of biochemical parameters and rate of wound healing in patients of roup II

Indicators	Time of observation				
	Admission day	3 day	5 day	7 day	10 day
pH of the wound environment	4,1±0,24	5,6±0,28***	6,7±0,34*	7,1±0,38	7,1±0,38
% reduction of the wound surface	0	2,4±0,14***	3,2±0,16***	3,3±0,12	3,9±0,21
Wound exudate protein (g / l)	54,7±2,62	43,6±2,28**	38,8±1,39**	-	-
Total blood protein	64,7±1,32	69,7±3,64	71,8±3,25	72,1±2,28	76,2±3,35
PC according to M.F. Mazuriku	0,9±0,04	1,4±0,07***	1,6±0,06***	-	-

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

The study of the dynamics of contamination of wounds against the background of complex treatment and the use of a local a bacterial environment with a 25% solution of dimexide showed that at the time of admission the degree of contamination was the same as in the patients of the comparison group, i.e. quite high, averaging 108 mt / y. But in dynamics against the background of complex treatment after surgical treatment, the use of a local a bacterial environment with a 25% solution of dimethyl sulfoxide, on the next day the microbial contamination of wounds decreased to 103 mt / g and already on the 3rd day of treatment these figures were

below the critical level and corresponded to 102 mt / g of fabric. It should be noted that similar phenomena in patients of the comparison group were achieved only on the 4-5th day of treatment. Against the background of the complex treatment of purulent surgical diseases of the hand using a local a bacterial medium with a 25% solution of dimethyl sulfoxide, the time for cleansing wounds from infection was reduced to 2.0 ± 0.5 days, which in patients of the comparison group was noted only by 5.5 ± 0, 5 days.

CONCLUSION:

The use of an abacterial medium with a 25% solution of Dimexidum in patients with acute purulent surgical diseases of the hand is the most optimal, because it promotes faster and more qualitative cleansing of the wound surface from purulent-necrotic tissues and microbial bodies, a decrease in intoxication indicators and an acceleration of regenerative processes, which together allows to reduce the time of their treatment and rehabilitation.Taking into account the results of a comparative analysis, an optimal method of treatment of patients with purulent surgical diseases of the hand on an outpatient basis was developed by local application of an abacterial medium with a 25% solution of Dimexidum.

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