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COMPLICATIONS OF TREATMENT OF ACUTE HEMATOGENOUS OSTEOMYELITIS, LITERATURE REVIEW

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ОСЛОЖНЕНИЯ ЛЕЧЕНИЕ ОСТРОГО ГЕМАТОГЕННОГО ОСТЕОМИЕЛИТА ЛИТЕРАТУРНОЕ ОБЗОР.

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АННОТАЦИЯ

Гематогенный остеомиелит – это гнойное поражение костного-мозга и прилежащей костной основы, которое затем вовлекает в патологический процесс надкостницу и окружающие мягкие ткани. Инфекционные агенты при этом заболевании попадают в костный мозг с током крови. Острое воспаление костного мозга у взрослых встречается крайне редко, как правило, это болезнь детского и подросткового периода. Вирулентность инфицирующего организма, размер бактериального инокулята и резистентность хозяина определяют, возникает ли инфекция. Вирулентность золотистого стафилококка, наиболее распространенного патогена, зависит от относительной неэффективности врожденных защитных сил хозяина при борьбе с внеклеточными токсинами и ферментами, компонентами клеточной стенки, бактериальной ДНК и экспрессией капсулы, которая является основным фактором, определяющим вирулентность. Процесс взаимодействия

бактерий с тканями хозяина в высшей степени динамичен и подвержен модуляции регуляторными механизмами бактерий, факторами окружающей среды, защитными механизмами хозяина и антибактериальной терапией.

Ключевые слова: Остеомиелит, осложнения, противовоспалительные, деформация, кост.

In general, with timely diagnosis of NBO and early administration of pathogenetic treatment, the outcome of the disease can be good. However, if uncontrolled severe inflammation persists for a long time, it can lead to the development of complications. Complications of nonbacterial osteomyelitis suggested by Stern M [2] Complications of NBO

Pathological fractures

Limb deformity

Spinal deformities: kyphosis, scoliosis, kyphoscoliosis

Bone spurs/hyperostosis

Delayed axial growth leading to shortening of a skeletal section (segment)

Local delay (asymmetry) of growth leading to deformation of a part (segment) of the skeleton

Treatment of nonbacterial osteomyelitis

Currently, therapy for non-bacterial osteomyelitis has not been developed; there are only research results on the effectiveness of non-steroidal anti-inflammatory drugs, bisphosphonates, IL-1 and TNF-a inhibitors. However, the timing of this or that therapy, the criteria for its effectiveness and the long-term outcomes of therapy are still unknown.

Nonsteroidal anti-inflammatory drugs

Nonsteroidal anti-inflammatory drugs (NSAIDs) have found widespread use in many areas of medicine due to their anti-inflammatory, analgesic and antipyretic effects. The anti-inflammatory effect of NSAIDs is explained by their inhibitory effect on the synthesis of prostaglandins. An increase in prostaglandin production is accompanied by damage to cell membranes, including lysosome membranes. This leads to the release of lysosomal enzymes. Prostaglandins play a role not only in the development of inflammation, but also in reactions such as blood clotting, bone metabolism, nerve growth and development, wound healing, kidney function, maintaining microcirculation levels, and immune responses. It is currently known that in the human body prostaglandins are synthesized in the form of two isoforms - constantly synthesized (COX-1) and inducible (COX-2) [1]. NSAIDs are not only a first-line drug of therapy, but also an integral component when using combination therapy . The most common treatment for NBO is naproxen at a dose of 10-15 mg/kg/day for an extended period, averaging 12 to 25 months [1]. According to the German registry of NSMO, therapy with naproxen at a dose of 15 mg/kg for a year reduced the number of clinical and radiological lesions by 2.5-4.0 times, and reduced the main indicators of disease activity [3]. According to Vogeku A. et al. the expected effectiveness of NSAIDs was 57%. [1]. Indomethacin is prescribed at a dose of 1.5 - 2.5 mg/kg/day. The presence of indomethacin effects such as suppression of osteosclerosis and inflammation due to inhibition of prostaglandin synthesis has made it possible to effectively use it in the treatment of NBO and often makes it the drug of choice, especially in the presence of vertebral lesions [3]. It is also possible to use other drugs from the NSAID class, such as diclofenac, nimesulide, ibuprofen, especially in cases of non-vertebral (peripheral) lesions in the presence of concomitant arthritis, but priority still remains with indomethacin and naproxen.

Glucorticoids have a powerful anti-inflammatory effect, suppressing the synthesis of anti-inflammatory cytokines - interleukins - 1, 6, 8, tumor necrosis factor-a and prostaglandins [3]. Glucocorticoids, used in the form of a short course lasting 2 - 3 weeks at a starting dose of 2 mg/kg, can quickly stop inflammation in the bone, pain, fever, and normalize activity indicators. According to Borzutzky A and co-authors [8], the expected effectiveness of glucocorticoids was 95%; however, after completing a short course, a relapse of the disease is possible. To use glucocorticoids, confidence in the diagnosis is necessary, since in case of an error, especially in the case of a tumor process, their use is fraught with modification of not only the clinical, but also the morphological picture (medicinal pathomorphosis), which leads to late diagnosis of the disease, erroneously regarded as NBO. Therefore, the widespread use of GCs in the treatment of NBO is not recommended.

In most cases, therapy with pamidronic acid for non-vertebral lesions is carried out when therapy with NSAIDs, glucocorticoids, and DMARDs is ineffective, while for spinal lesions, bisphosphonates in combination with NSAIDs are first-line therapy. Bisphosphonate therapy has a number of advantages: relatively low cost, rapid onset of effect, pronounced analgesic and anti-inflammatory effects. However, like any drug, bisphosphonates have their drawbacks, which limits their widespread use in pediatric practice. The main disadvantages of bisphosphonates include long-term persistence of the drug in the bone (sometimes > 10 years), the presence of transient hypocalcemia, the development of secondary bone fragility with long-term use, inhibition of linear growth when used in large doses, and the lack of pediatric indications. Due to the fact that bisphosphonates remain in the bone for years and in small doses enter the systemic circulation for a long time, the issue of safety of use in adolescent girls is being discussed in relation to the possible risks of penetration through the placenta and effects on the fetal skeleton during pregnancy. The negative effect of bisphosphonates on the formation of the fetal skeleton has been shown in animal studies; however, in relation to humans, the available literature contains the results of two meta-analyses indicating its safety: in a meta-analysis from 1950-2008. 51 cases were described [6], and in a meta-analysis from 1945 to 2014. - 65 cases of BF use during pregnancy [7]. In none of the cases was it described with TNF-a inhibitors (IFNO-a) Tumor necrosis factor (TNF-tumor necrosis factor) received its name due to its ability to cause hemorrhagic necrosis of a number of tumors. TNF-α is one of the most well-known proinflammatory cytokines, playing a key role in the development of inflammation in rheumatoid arthritis, Crohn's disease and other immune-mediated diseases. TNF-a promotes the development of symptoms of endotoxemia - fever, weight loss, leukocytosis, sepsis, and stimulates the processes of osteoporosis and osteomalacia [2].

Diagnostic errors in hematogenous osteomyelitis in children

As previous studies have shown, timely comprehensive use of traditional methods of surgical treatment of HO in children does not exclude an unsatisfactory course of the disease. Consequently, the search for new approaches and methods of surgical intervention on the site of osteomyelitis can significantly affect the results of treatment in general.

The choice of aspiration drainage in the treatment and prevention of osteomyelitis was based on the fact that the aspiration technique in surgery has been used since the end of the century before last in the treatment of purulent-inflammatory diseases and the prevention of complications. Until now, it has been used as an independent method, or as an integral part of

other methods for draining a purulent focus, and has proven itself to be an effective and safe technique. This made it possible not to conduct experimental studies on laboratory animals and to apply the method in clinical practice.(13)

As can be seen from the analysis of the above literature review, surgery and various drainage techniques are the main ones in the complex treatment of osteomyelitis, and essentially one of the methods of actively influencing the course of the inflammatory and regenerative process in tissues. However, bone drainage techniques are not considered a major factor in bone regeneration. The concept of active treatment includes a complex of conservative and surgical measures aimed at maximally reducing all phases of the inflammatory process. Its purpose is tissue healing according to primary or primary intention

When characterizing asiirrational drainage and its application in practice, it is necessary to take into account its features. Underestimation, and on the other hand, overestimation of its capabilities, sharply reduces the quality of its use in patients with osteomyelitis. Only indications and correct implementation of the technique increase its effectiveness.

The term “aspiration” (suction, suction) implies an active, or more precisely, forced nature of the effect on the outflow of wound exudate. Thus, the term "aspiration" is sufficient. He explains and characterizes the sign of “active” “forced” drainage. The only difference can be in the degree of vacuum used for aspiration. Therefore, in future work the term “aspiration drainage” will be used.(5)

The method first of all had to take into account and eliminate the conditions and mechanisms that support and contribute to the transition of inflammation to the chronic stage. In practice, show and explain how the gradual restoration of regenerative processes in the bone occurs. Considering the characteristics of the bone structure and the architectonics of the blood vessels, the healing process cannot take the same duration as in soft tissues. First of all, it will differ in the duration of the course and surgical treatment, that is, in the timing of drainage of the bone purulent focus. During this period, conditions that support the mechanism of inflammation and destruction of bone tissue should be gradually eliminated.

In cases where the technique is forced to be applied late in the acute stage of the disease, it should be easy to implement and quickly and reliably evacuate the formed pus from the lesion. First of all, stop or sharply reduce the resorption of purulent inflammation products into the blood and lymphatic system, which are pathways to the development and maintenance of toxicosis, as well as the spread of the purulent process beyond the bone. Subsequently, achieve complete elimination of the etiological microbial factor, or their association and inflammation products from the bone purulent focus. In the future, maintain these conditions for the period of restoration processes in the bone tissue affected by the osteomyelitic process. If the goal of general therapy is to protect and normalize homeostasis, then the goal of surgical treatment should not be the simple elimination of pathological conditions in the lesion, but the creation of new conditions for the long process of recreating young bone structures, that is, neogenesis. Give the bone the properties of mature tissue and provide strength for mechanical load and resistance to infection, preventing relapses of inflammation. In those clinical situations where it is not possible to apply the technique in the early stages in order to prevent destruction in the bone, in subsequent treatment it should have, regardless of the general capabilities, a local stimulating and optimizing effect on osteogenesis.(4)

To do this, the treatment method must have certain properties and parameters that organically, without further disrupting the functions of the body, would methodically and constantly influence the specified mechanisms of the pathogenesis of the disease. The treatment method should have low surgical trauma. The operation itself would be perceived adequately and realistically by the patients themselves. It is very important and desirable that the patient or the parents of a small patient participate in the process of further treatment after the operation. The aspiration method of treatment has all these advantages. The study of its technical side of impact on the inflammatory process in the lesion showed that it has proven itself to be quite pathognomonic from this point of view.

Next, it was necessary to determine the timing and volume of surgical intervention when using the method of long-term aspiration drainage. The recommended surgical tactics are somewhat different from the known recommendations. It comes not only from the time frame in determining the duration of drainage. In general, it can be formulated as follows: the more severe the patient's general condition and the less pronounced compensatory, that is, regenerative changes in the bone, the more sparing the amount of surgical intervention used. So that the technique could be used as an initial step in preparing the patient for radical surgery. (9)

REFERENCES

1.Onche II, Obiano SK. Chronic osteomyelitis of long bones: reasons for delay in presentation. // Niger J Med. - 2004. - Vol. 13. - №4. - P. 355-358.

2.Parrott D. Thymus-dependent and thymus-independent populations origin, migratory pattern and life span / D. Parrott, M. de Sousa // Clin. Exp. Immuol. - 1971. - Vol. 8, N 5. - P. 663-672.

3. Шевцов В.И., Макушин В.Д., Куфтырев Л.М. Классификация ложных суставов и дефектов длинных трубчатых костей с позиции чрескостного остеосинтеза//Журн. Травмат. и ортопед.России.- N2, 1994.-С.30-38.

4. Шевцов В.И., Попков А.В. Оперативное удлинение нижних конечностей.- М.: Медицина, 1998. - 190 с.

5.Yoshii T, Magara S, Miyai D et al. Local levels of interleukin-lbeta, -4, -6 and tumor necrosis factor alpha in an experimental model of murine osteomyelitis due to staphylococcus aureus. // Cytokine. - 2002. - Vol.21. №19(2).-P. 59-65.

6.Душанова Г. А. и др. Анализ взаимосвязей параметров иммунного гомеостаза с состоянием системы ПОЛ-АОС //Вестник науки и образования. – 2021. – №. 2-2. – С. 63-68.

7.Даминов Ф. А. и др. Диагностика и лечение интраабдоминальной гипертензии при ожоговом шоке //Журнал Неотложная хирургия им. ИИ Джанелидзе. – 2021. – №. S1. – С. 19-20.

8. Даминов Ф. А. и др. Хирургическая тактика лечения диффузно-токсического зоба //Академический журнал Западной Сибири. – 2013. – Т. 9. – №. 1. – С. 21-21.

9 З. Э. и др. АТИПИК МИКРОФЛОРА ЭТИОЛОГИЯЛИ ЎТКИР ОБСТРУКТИВ БРОНХИТЛАРИНИНГ Ў ЗИГА ХОС КЛИНИК КЕЧИШИ //Research Focus. – 2022. – Т. 1. – №. 4. – С. 23-32.

10. Юсупова Н. А., Бердиярова Ш. Ш., Юлаева И. А. Гематологические характеристики факторов риска и оценка прогноза при COVID-19 //Вестник науки и образования. – 2021. – №. 5-2 (108). – С. 25-29.
11. Abdikadirova N. Y. et al. Clinical and laboratory parameters in children with urolithiasis and the Quality of laboratory tests at the stage of stationary treatment //Annals of the Romanian Society for Cell Biology. – 2021. – С. 7002-7012.
12. Faiziboev P.N., Ochilov S.A. Samarkand State Medical University «METHOD OF PREPARING NOVVOT FROM NATIONAL CONFECTIONERY PRODUCTS IN UZBEKISTAN» 2023
13.DR Khudoyarova, BF Ibragimov, NS Ibragimova, ZA Kobilova Fertility recovery from polycystic ovarian syndrome // International journal of pharmaceutical research (+ Scopus) ISSN, 0975-2366, 0
14.IN Sabirovna, IB Fikriyevich, BS Shukurullayevna, YI Andreyevna Clinical picture of hypoxic-ischemic encephalopathy in newborn with different gestation date // Thematics Journal of Microbiology 6 (1), 2022
15. Kudratova Z. E. et al. Chlamydial Infections (Intracellular Infection) in the Development of Bronchitis //TJE-Tematics journal of Education ISSN. – 2021. – С. 2249-9822.
16.Nabieva F.S., Rayimova F.S., Abdusamatov B.A. Artificial intelligence in medicine //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 5. – С. 23-27.
17. Sultanbayev Sh.A., Ochilov S.A. «Динамика развития эндогенной интоксикации при экспериментальных термических ожогах» 2022.