Comprehensive Program for the Treatment of the Face and Jaws in Patients with Viral Hepatitis

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Abstract. The article is devoted to the clinical effectiveness of complex treatment of facial phlegmon in patients with liver pathology. Prevention and treatment of infectious diseases in the field of surgery is one of the most important tasks facing modern dentistry. According to the literature, more than 50% of surgical complications of a single-gene infection are associated with comorbidities - cardiovascular and respiratory diseases, diabetes mellitus, kidney and liver diseases. Especially in recent years, the incidence of viral hepatitis B has sharply increased in inpatient and outpatient settings. To date, the problem of surgical infection is important and relevant. Annually, septic diseases affect millions of people and are the leading cause of death from infectious diseases in all developed countries of the world. At the same time, there is a steady increase in the number of patients with abscesses and phlegmon of the face. Many issues of etiology, pathogenesis, prevention and treatment of purulent-septic diseases remain unresolved, which explains the constant interest and attention of researchers to this problem. It is known that acute inflammatory processes in the face and jaw often develop as a result of a decrease in the body's immune reactivity, and the course of the disease and the likelihood of complications are often determined by the primary indicators of immunity. The aim of the study was to develop a program for the complex treatment of acute progressive inflammatory diseases of the maxillofacial region in patients with viral hepatitis B. We analyzed 52 cases of maxillofacial abscess in patients with type B viral hepatitis. The causative agents of purulent-inflammatory processes in the face are aerobic, anaerobic odontogenic and periodontal infections, which predominate in the development of reduced immunity and endogenous intoxication syndrome, as well as the accumulation of lipid peroxidation products. Key words: abscess, phlegmon of the face and jaw, type B viral hepatitis, odontogenic and periodontal infections, immunity, liver, frequency, structure, hepatoprotectors.

Introduction

The analysis of domestic and foreign literature has shown the presence of certain reports on the use of morphological methods of research in patients with purulent-inflammatory processes on the face. But at the same time there are no studies devoted to the study of the long-term course of this pathology in the dynamics of proliferative activity. Besides, there are no data on studying the possibility of correction of apoptosis intensity and stimulation of regeneration on the background of cytogenetic and...
immunological changes in patients of this category. Today immune mechanisms of physiological activity coordination in conditions of pathological process development are widely studied. In particular, the changes of immunocompetent cells and immunoglobulins in purulent-inflammatory diseases in the maxillofacial region are sufficiently studied, but the problem of purulent infections in the maxillofacial region still remains very actual. Numerous studies of domestic and foreign authors are aimed at solving this issue [6,8,11, 15]. Due to the increased frequency and severity of inflammatory diseases in the maxillofacial region, the problem of treatment of patients with this pathology continues to be one of the leading problems of surgical dentistry and maxillofacial surgery [10,13,17]. Most researchers agree that in clinical practice phlegmons, which individually occupy cellular spaces belonging to several anatomical regions of the head and neck, are difficult to treat with generally accepted methods of treatment. The increased incidence of dangerous and severe complications - secondary mediastinitis, sepsis, thrombosis of the porous sinuses, brain abscesses, erosive haemorrhages from large main vessels, etc. [14,18,20]. Many authors associate the aggravation of the frequency and clinical course of acute purulent-inflammatory diseases in the maxillofacial region with changes in the pathogenic properties of microorganisms, the increase in the etiological role of microbial micturition in the predominance of non-spore-forming anaerobes, the emergence of polyantibiotic-resistant forms of microorganisms, allergies, sensitisation, lesions of infected root canals and periodontium of patients. poisoning by microflora derivatives is explained by immunosuppression and weakening of nonspecific defence mechanisms of the organism [16,19,21].

The complex treatment programme of acute progressive inflammatory diseases of maxillofacial region in patients with viral hepatitis B is a one-stage, purposeful and complex therapy aimed at changing hemodynamic and metabolic disorders, suppressing the infectious agent, combating intoxication, increasing non-specific resistance and immunological reactivity of the organism against the background of active surgical sanation of the primary purulent focus. The programme of complex treatment includes preoperative preparation, operative period and postoperative period. The strategic goal of complex treatment is defined as circulatory disorders, restoration and stabilisation of metabolic processes, as the state of these important homeostasis systems predetermines the overall effectiveness of treatment. Surgical intervention, which included revision of all cellular spaces involved in inflammation in the face, jaw and neck region, was an inevitable and integral component of the healing process, regardless of the severity of the disease. Since the levels of preservation of reserve capabilities of the organism are different, the ratio of protective-adaptation and pathological reactions determined the choice of tactics, methods and means of treatment.

On this basis, the implementation of a comprehensive treatment programme for sepsis provides for the creation of the most favourable conditions for strengthening the mechanism of sanogenesis, harmonisation of stimulating and substitutive therapeutic measures, and in severe sepsis-decompensation of protective-adaptive mechanisms that have a sedentary character and are aimed at restoring and maintaining the activity of vital organs and systems. The treatment of purulent-inflammatory diseases and wound infections, including STIs, remains a complex problem with no definitive solution. This is especially true for those who suffer from viral hepatitis B, immunodeficiency, concomitant pathologies (diabetes mellitus, vascular diseases, etc.) is very relevant for identified patients. According to different authors, purulent-infectious diseases with a share from 12% to 15% in the structure of surgical diseases last longer and are accompanied by complications. In a purulent wound the species composition of pathogens changes repeatedly (2-3 times) within a short period of time - up to 10 days. Antibacterial therapy of purulent focus (broad-spectrum antibiotics), symptomatic treatment, cracking (dissection) in combination with secondary sutures on the cleaned wound, sanation, drainage require a long time - an average of 20 bed-days, while with widespread purulent processes and diabetes mellitus can last up to 40-60 beds / day. Due to
increased tolerance of microbial strains to mass antibiotics and impossibility of adequate sanation of purulent focus with the use of traditional technologies, as a result of which 3-10% of patients with phlegmons and abscesses of the Juggs develop purulent mediastinitis, thrombosis of cavernous sinus, osteomyelitis of the jaw, pathological process leading to the development of severe complications such as sepsis. Conventional surgery with broad-spectrum antibiotics due to the increased risk of conventional use in combination with intervention does not always work.

The localisation of the purulent-inflammatory process in the Juggs dramatically increases the relevance of the subsequent cosmetic defect problem and forms the basis for the future use of plastic surgery in 8-15% of patients who have undergone surgery. This, in turn, encourages surgeons to introduce into clinical practice minimally invasive technologies and semi-invasive surgical techniques that ensure the formation of scars in accordance with their physical characteristics (Zhelezniy p.A. and coauthors, 2017). Over the last decade, significant advances have been made in the creation of new methods of surgical treatment of the foci of pus, and the treatment should be carried out in combination with additional effects on the wound surface with cryotherapy, pulsating fluid treatment, laser therapy, vacuum therapy, ultrasonic cavitation, etc. (Wrist A.V. 2019).

Despite the relevance of literature analysis, many questions related to the course of phlegmon and maxillofacial surgery abscess in patients with viral hepatitis B remain unanswered. Based on the above, the study was aimed at improving the developed and pathogenetically justified complex therapy designed for the treatment of patients with viral hepatitis B and marked abscesses and phlegmons in the maxillofacial region.

**Purpose of the study:** Creation of a comprehensive treatment programme for acute progressive inflammatory diseases of the maxillofacial region in patients with viral hepatitis B.

**Materials and methods of research:** Based on the tasks set before us, the programme we developed was used in the complex treatment of acute progressive inflammatory diseases of the maxillofacial region in patients suffering from viral hepatitis B type. The research was conducted from 2015 to 2020. Experiments were conducted in 47 patients who presented with abscesses and phlegmons in the maxillofacial region, depending on the current load, while patients who received therapeutic procedures were divided into groups A and B. 31 was formed from those diagnosed with abscess and those with viral hepatitis B. 12 healthy subjects were included in the control group. Of the 47 patients, 30 were male and 17-female. All patients were treated in the combined department of facial surgery of Samarkand city and they were brought to the clinic on urgent referral. All patients underwent microbiological, immunological and biochemical tests and mathematical analysis. In addition to clinical assessment, general condition, body temperature, blood pressure, heart rate, presence of dyspepsia symptoms, and general blood and urine analyses were measured in all patients.

Sepsis was detected in all patients (100.0%). Therefore, the complex treatment programme developed by us was applied in a severe group of patients with acute progressive inflammatory diseases in the maxillofacial region and neck, most of whom (59 patients) came with unstable compensation or decompensation of the life support system.

Patients with abscesses were suffering from viral hepatitis B between 16 and 56 years of age. It was mainly caused by chronic periodontitis. Inflammation of the mandible was observed in half of the patients. The occurrence of inflammation in 23 patients was caused by first molars, in 19 patients by lower wisdom teeth, in 10 patients by lower molars, in two cases by lower second teeth, and in three cases by upper lateral teeth. All patients had the causative teeth extracted under local anaesthesia on the same day they were admitted. Patients were prescribed antibiotics, desensitising agents, analgesics, hepatoprotectors, physiotherapeutic procedures on the 2nd day after surgery.
Results of the study: in the treatment of purulent-inflammatory diseases, the correct choice of antibacterial therapy is of particular importance. It significantly complements surgical treatment, but, as a rule, does not replace it. The main focus of antibacterial therapy is on the specific effect on unhealthy microorganisms in the patient's body.

Current antibacterial therapy can be called rational only if the drugs are selected taking into account:
1. identification of the trigger;
2. determination of sensitivity of microflora to antibiotics;
3. studying the pharmacokinetics of the remedy (mechanism of action, its stability in the body, its ability to diffuse into different media of the body, distribution in organs, rate of excretion from the body, etc.)) know.

It is necessary to ensure its effective concentration, minimising as much as possible the side effects that the drug has on the body. Purulent-inflammatory diseases in the maxillofacial region are provoked by pathogenic or conditionally pathogenic, Gram-positive, Gram-negative microorganisms, as well as mixed flora-microbial association. Staphylococcus monoinfection favours microbial association involving blue pus bacillus, Protea, Klebsiella, Bacteroides, etc.

In bacteriological studies, microbial growth was observed in 54.0% of patients in all subgroups, in 72.2% of cases they were found in associations consisting of 2 (71.5%) and 3 (26.7%) pathogens, in 25.8% of cases in monocultures. Analysis of the species composition showed that obligate anaerobes (86.3%) were most frequently identified in the main group. On the other hand, facultative anaerobes were relatively less prominent (13.7%).

As it is known, the possibility of conducting bacteriological studies and detecting anaerobic microorganisms is born only when there is a special laboratory of anaerobic microbiology, therefore, special attention was paid to the following signs of anaerobic infection:
* presence of crepitation in the area of inflammatory infiltrate on tissue palpation;
* the odour of dark-coloured discharge from a wound in which gas bubbles are present.;
* necrosis of tissues in the focus of inflammation: muscles, fascial sheets, fibre of dirty grey or dark brown colour, loose, infiltrated, easily migrates and tears, blood does not flow.
* negative results of bacteriological studies in the presence of a clinical picture of a severe purulent process.

Cephalosporins, macrolides, lincomycin, rifampicin, fusidine and aminoglycosides have been used in combination with oxacillin or lincomycin to affect Gram-positive flora, which in most cases manifests in staphylococcus aureus emblem.

One of the most common representatives of pseudomonasaeruginosa (blue purulent bacillus) is considered a Gram-negative microorganism caused by the treatment of purulent infection has led to certain difficulties. Of the modern aminoglycosides, Carbenicillin, as well as Dioxidine, rifampicin and biseptol, and in severe cases a combination with an aminoglycoside have been used in the treatment of blue pus.
In the treatment of protein infection, active agents against all types of protein - Clafortan, and a combination of aminoglycosides and ampicillin, cephalosporins were used.

E.Against purulent infection caused by Escherichia coli, the most effective agents are cephalosporins, aminoglycosides and their combinations, as well as semiquantitative levomycetin, Biseptol.

Particular difficulties caused treatment of infections caused by anaerobes, which do not form spores and are often manifested in the emblem of the group of bacteria Bacteroides. In comparison with them, metronidazole, Metrogil, metrid, and to a lesser extent levomycetin, dioxide showed greater efficacy.

Considering that it is impossible to carry out antiviral therapy in case of liver damage by virus, the remedy ursosan at a dose of 10 mg/kg/milk with a pronounced anti-inflammatory effect is prescribed. In the sum of $\geq 6$ is the optimal way to obtain for a month.

Before the bacteriological diagnosis, therapy of purulent infection was carried out based on the clinical picture of the disease. A combination of antibiotics was often used to "block" all possible routes of infection. The most effective combination of antibiotics based on the peculiarities of the mechanism of action of various drugs is presented in Table 1.

After receiving the result of the microbiological study conducted in the laboratory, the antibiotic prescription process was modified according to the antibioticogram.

The amount of drugs taken was determined based on the instructions for use of the respective antibiotics. In those cases where certain situations were observed, especially severe and very severe course of the disease, Rocephin was prescribed, ceftriaxone - up to 4 grams, aminoglycosides - up to 2 grams per day.

In some cases, the duration of aminoglycosides administration was increased to 9-11 days.

In addition to traditional methods of intramuscular and intravenous administration of antibiotics, intra-arterial administration by retrograde catheterisation of the common carotid artery or catheterisation of its branches was used in 8 patients.

Generalisation of infection, severe course of the disease with the risk of its spread to the chest, brain were the grounds for prescribing antibiotics intra-arterial administration.

In phlegmons of the face, mouth cavity floor and neck the superficial artery of the temple was catheterised, it should be noted that the catheter was carried from the depth of 8-10 cm.

A 2-2, 5 cm incision was made anteriorly over the ear to separate the artery. Before fixation of the catheter, the condition and infusion area were monitored by administering 5-15 ml of 0.25% novocaine solution or 5000 BR of heparin with novocaine. Patients felt warmth or mild tingling when novocaine solution was injected into the infusion zone, whereas burning sensation was observed when heparin and novocaine were injected, which quickly subsided.

The study of this method initially determined the infusion zone by injecting a 3% solution of methylene blue in 25% glucose solution into the catheter. This causes the skin of the relevant anatomical area to take on a blue tinge. Fluoroplastic catheters with a diameter of 1.5-2 mm were used for catheterisation. In addition to antibiotics, 0.25% solution of novocaine, heparin, hydrocortisone, protease inhibitors, diphenhydramine or Suprastin (in the same amount and in combination) were administered.

Drugs were administered fractionally. Previously, 10-15 ml of 0.25% novocaine solution, 25000-50000 BR of Trasylol or Contricol were administered. The catheter tip was closed after 12.5-25 mg of hydrocortisone, 5000-10000 BR of heparin, 5-10 ml of 0.25% novocaine solution. The drugs were
administered 1 or 2 times a day for 2-3 days. 1-2 days after the last drug was administered, the catheter was removed. After removal of the catheter, no ligature was inserted into the artery, and no bleeding was observed.

The practice of Intra-arterial administration of antibiotics in all patients was carried out as part of complex treatment and had a significant positive effect on the general condition of patients and changes in the local focus of inflammation. After the first infusion, the sensation of pain, intensity of hyperthermia of tissues in the area of inflammation decreased, local temperature dropped by 1-1.5 °C. After 2-4 infusions pain, as a rule, disappeared, general condition improved, sleep normalised and appetite appeared. The size of the inflammatory infiltrate significantly decreased, skin colour returned to its original appearance, wounds were cleared of pus and necrotic masses.

On the background of general condition improvement, decrease of intoxication level and dynamics of positive changes in the inflammation focus, interesting shifts in morphological and biochemical blood parameters were also revealed. By the 3-4th day Echt decreased, the level of albumin increased, &1 and &2-content of globulin decreased.

During the period of mastering this technique we witnessed complications caused by errors in infusion technique in two patients. One patient had a seizure (characteristic of an epileptic species) during rapid infusion of a concentrated monomycin solution, accompanied by a transient loss of consciousness. Another patient experienced transient loss of vision during the administration of 3% methylene blue solution (for the purpose of determining the infusion zone), a condition that we believe may be related to the fact that the retina was blocked by the dye. Complications lasted for a short time (1-2 minutes) and had no effect on the course of the disease, the condition of the patients.

The regional method of antibiotics administration is of great importance not only in the control of complications from the side of the brain, typical for progressive inflammatory processes in the maxillofacial region and neck, but also in the prevention and treatment of septic pneumonia. We controlled them by direct injection into the pulmonary artery by catheterisation of the sciatic vein. To this end, 24 patients (14.8%) underwent sciatic vein catheterisation using the Seldinger technique for extensive infusion therapy.

Antibiotics were used during the treatment of all-59 patients. Complications related to antibiotic therapy were reported in five patients. Allergic reactions such as skin itching, rashes, general weakness were observed in 4 patients, and 1 patient developed an abscess at the site of antibiotic administration (in the buttocks), which opened.

**Conclusion:** Thus, the conducted clinical and laboratory studies have shown the expediency of differentiated use of antibiotics in the complex treatment of patients with detected acute progressive inflammatory processes in the maxillofacial region and neck and their complications. Conducting microbiological studies to identify the causative agent of the disease and determine the sensitivity of microflora to antibiotics is a prerequisite for the effectiveness of antibiotic therapy. Until data on the nature of the causative agent and its sensitivity to antibiotics are obtained in specialised surgical departments, it is justified to conduct a systematic, retrospective analysis of the results of bacteriological studies in order to select antibiotics or their combination. In addition, we received a pronounced clinical effect from regular infusion therapy and haemodialysis, the use of increased doses of antibiotics against the background of hyperdynamics of the circulatory system.

Hepatoprotectors for patients with acute progressive inflammatory diseases in the maxillofacial region and viral hepatitis B serve to enhance moderate functions of hepatocytes due to increased supply of glutathione, taurine, sulfates and increased activity of enzymes involved in the oxidation of xenobiotics, as well as excessive lipid peroxidation (LPO), binding of lipid peroxidation products...
(hydrogen peroxide, free ions okin and N + and B), in regeneration of cell membrane structure (this mechanism is also typical for all hepatoprotectors, but in this place the leading role is played by essential phospholipids and UDCA (ursosan), in addition, they have anti-inflammatory and immunomodulatory effects, primarily on the agents of UDCA (ursosan); blocks fibrogenesis by eliminating hepatocyte necrosis and prevents the penetration of antigens from the gastrointestinal tract by changing the location of intestinal bacteria and their derivatives, which are considered Kupffer cell activators; blocks enzymes involved in the synthesis of connective tissue components, stimulating the activity of collagenase in the liver.

**LITERATURE**


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