The results of microbiological studies

Microbiological studies were carried out to identify the causative agent and determination of CFU, as well as to monitor the effectiveness of the treatment. Gathering pathologic releasing substance from the wound to the qualitative analysis of the microflora was performed using a sterile swab, which was placed in a special tube to transport the coal environment.

The sensitivity of the isolates to antibiotics was determined by the standard technique for disks. In addition, it was conducted quantitative research methods to determine the level of microbial contamination in 1 gram of tissue injury. It should be noted that this method is the most informative.

When determining overall characteristics of the selected agents, it was found, that they mainly represented by staphylococcus and gram-negative flora. The leading role in microbiological study of releasing substance from purulent wounds took St. Aureus (62.5%); Proteus mirabilis (54.8%); E. Colli (50.8%) and a small amount Str. Pyogenus (12.5%). It should be noted, that the above listed organisms are major pathogens of purulent infection in surgery.

When determining the sensitivity was defined that most of the identified bacteria showed resistance to the most widely used antibiotics and retained sensitivity to cephalosporin, aminoglycoside and fluoroquinolones antibiotics past generations. So, they were the most sensitive to ciprofloxacin, cefazolin and rifampicin and less sensitive to penicillin and erythromycin. Furthermore, they were multi-resistant to several antibiotics simultaneously. These results suggest that the microflora isolated from purulent wounds is often a multi-resistant. Therefore, at the beginning of the complex treatment of purulent wounds it is recommended to appoint ciprofloxacin and rifampicin, ceftazidime, and after receiving the results of the study of bacterial purulent wounds, antibiotic therapy should be corrected taking into account the sensitivity of microorganisms to antibiotics.

Along with the quality of microbiological studies of quantitative methods of research have been conducted, which today are the most informative, because allows to define levels microbial content per 1 g. of tissue injury.

Results of the study showed that before treatment in all groups of animals determined by the high level of contamination of tissue wounds, an average of 1 × 10⁶ CFU/g.

On the third day simulation of purulent wounds destructive level of microbial contamination was in the animals of group 1 — 10⁵–10⁶ CFU/g. The animals in group 2, treated with the standard treatment, on the 3rd day level of microbial contamination was 10⁷–10⁸ CFU/g. The animals of the 3rd group, which were received treatment PDT only in these terms the level of contamination was on average 10¹–10³ CFU/g. The lowest level of microbial contamination is observed in the animals of group 4, which was carried out comprehensive treatment with PDT, it was 10²–10⁴ CFU/g.

On the 7th day from the start of treatment of purulent wound microbial contamination level of performance in the animals of group 1 are without much dynamics. It should be noted that a significant reduction in microbial load of 1 g. of tissue observed in the animals of group 4 (10²–10⁴ CFU/g), compared to the contamination level data tissue wounds of animals in 2nd and 3rd groups (in average 10⁷–10⁹).

On the 10th day of observation in almost all groups noted a progressive decrease in the level of microbial contamination. However, in the group of animals received a combination treatment of antibiotic therapy with PDT observed sustained reduction in the level of microbial contamination of the wound tissue below the critical. The results suggest greater effectiveness of this type of exposure to destructive purulent wounds as compared to other treatments studied.

Thus conducted studies allow to evaluate the effectiveness of the method of photodynamic therapy of intraoral method of application of the photosensitizer methylene. These laboratory, thermometry, morphological, microbiological and planimetric data show, that photodynamic therapy and CO₂ laser is very effective non-invasive treatment of purulent wounds and serve as justification for the use of the method in clinical practice for the treatment of local acute purulent destructive diseases of soft tissues.

References:


Diagnostics and treatment tactics of non-stable pelvis injuries

Abstract: Treatment analysis of 415 patients with non-stable and poly-focal fractures of pelvis bones has been described in the article. All patients have been divided to the groups subject to the types of injury, the optimal algorithm of supplying medical aid was worked-out for each group and according to the severity of the combined injuries an appropriate treatment method has
been chosen: external fixation or combined osteosynthesis. The analysis of using different types of pin-rod devices of external fixation has been given. From 182 patients cured with the use of different types of surgical correction the total reposition has been achieved in 114 (62.9 %) cases with exclusive results. In 48 (26 %) cases the reposition was incomplete, an exclusive functional result in this group was achieved in 15 (31.2 %) patients, good result — in 33 (68.8 %) patients. 20 (11 %) patents had bad reposition and in 13 (65 %) cases the result has been estimated as satisfactory one. In 7 (34 %) patients with vertical and rotary unstability the received results were bad.

So, applying an active surgical treatment combining internal and external osteosynthesis of pelvic ring at severe non-stable pelvic fractures with symphysis pubis rupture allows to perform direct reposition and reliable fixation of bones fragments and thereby to provide optimal conditions for early activation, social adaptation and recovery for patients.

**Keywords:** diagnostics, treatment, non-stable injury, pelvis.

### Materials and methods

Data of treatment results of 415 patients with different pelvis injuries. The main quantity 315 (76 %) of patients were at the most capable age — 25–55 years. Males were dominated 302 (73 %) patients and females were 112 (27 %) correspondingly. Considering the fact that the main reason of pelvis injuries were road traffic accidents and fallings from a height, combined and multiple origins of trauma has been pointed in 327 (78.7 %) patients. In 298 of them there were craniocerebral injury of the different levels of severity, chest and lungs injuries — in 90 cases, abdominal cavity injuries — in 84 patients, kidney and urinary bladder injuries — in 72 victims and in 317 patients injuries were combined with extremity bones injuries. 244 patients admitted to the hospital had traumatic shock of different levels of severity.

According to clinical-anatomical types of pelvis injuries and treatment tactics the victims have been divided in three groups by AO Documentation Centre’s classification.

The 1st — group: A type — with a minimal displacement, without abnormality of the dorsal part of pelvic ring integrity; pelvic diaphragm is intact, pelvis is capable to withstand to usual physical activity without a displacement — 178 patients were in this group.

The 2nd — group: B type — rotary-unstable, but vertically stable injuries appeared due to effect on the pelvis lateral compressive or rotary forces. The back group of ligaments and pelvic floor remain intact, there is a possible rotary non-stability, 115 patients were in this group.

The 3rd — group: C type — rotary and vertically unstable injuries characterized by a complete separation of the pelvic ring including back sacroiliac complex. Injury can be one or two-sided, the quantity of victims in this group was 122 people.

All patients with pelvis injuries had been performed investigations and treatment according to the standards with a glance of dominating pathology. Being admitting all patients with combined pelvis injuries have been placed into the shock-room where have been examined by the specialists — traumatologist, neuro-surgeon, reanimatologist, general surgeon, urologist and others according to indications. In the case of non-stable hemodynamics the patients have been performed antishock procedures. Simultaneously there have been carried investigations including intaking analysis (general blood analysis, urine analysis, blood for group and rhesus, biochemical blood analysis and coagulogram). X-ray, USD of internal organs, Echo encephaloscopy, CT and MSCT.

From diagnostic point of view a complicated surgical intervention in pelvis cannot be based only on convex radiography. We as mane other authors think that spiral and multy-spiral computer tomography (MSCT) has significant advantages due to more volumetric image of injuries nature.

Pelvic bones CT with 3D image we have done with PHILIPS CT «Aura» (2002) in VOLUM RENDERING, slice — 7 mm,
Diagnostics and treatment tactics of non-stable pelvis injuries

Table index — 5 mm,. PITCH-1.5 regime and with PHILIPS «Brilliance 40» MSCT (2006) in spiral regime step 3 mm., layer width 3 mm., PITCH-0.6. 163 patients have been performed CT investigations.

X-ray investigation of patients has been done with PHILIPS «Duo DIAGNOST» (2002) stationary X-ray mashine SIEMENS «POLIMOBIL» (2001) portable apparatus. Performing X-ray investigation in oblique view in compare with other existing ways we did not turn the patients to the lateral position and it coul lead to the aggravation of patient’s severity condition, this procedure has been done by the tube flexion at the same 45° angle. At severe combined injuries X-ray investigation has been performed at the patient’s bed with the help of portable apparatus.

Diagnostics complicity at a combined injury has been specified by diversity, blurring of clinical presentations of abdominal cavity and retroperitoneal injuries. Specific investigations have been used for diagnostics and correct treatment. Clinical analysis of blood and urine are the most informative ones from applied laboratory investigations. USC of urinary bladder and abdominal cavity have been used for indirect signs imaging. Patients with pelvic bones injuries have been performed urinary bladder catheterization, at detection of blood presence in urine the patients have been performed Zeldovich test. Patients with urinary bladder injuries had positive Zeldovich test. These patients have been done X-ray investigation (urethrography with ascending cystography in two projections).

Treatment of pelvic injuries are only the part of general treating procedures. A great attention has been paid to the severity conditions estimation of victims as the majority of patients have admitted in different levels of shock. It is necessary to point that patients’ examination has been done against the background of anti-shock therapy and pain relief, intra-pelvic anesthesia by Sholnikov-Selivanov has been performed.

### Applied treatment methods in patients with pelvic injuries

Dislocations in hip joint have been eliminated after diagnosing under the general anesthesia. Patients with combined injuries, chest and abdominal cavity organs injuries required emergency surgical intervention have been performed operations on cavitary organs and extrafocal osteosynthesis sequentially after eliminating a dominated pathology. At the necessity of an operative correction of extremities fractures and pelvis injuries, one-phased operative intervention has been done with the use of small-invasive ways of osteosynthesis worked out at our hospital (Table 1).

<table>
<thead>
<tr>
<th>Treatment method</th>
<th>Type of injury by AO</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td></td>
<td>A 111</td>
</tr>
<tr>
<td>Opened reposition and osteosynthesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transosseous osteosynthesis by external fixation</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Combined osteosynthesis</td>
<td></td>
<td>47</td>
</tr>
<tr>
<td><strong>Totally</strong></td>
<td></td>
<td>178 (43 %)</td>
</tr>
</tbody>
</table>

The first group of patients (A type) as it is seen from the table, have been treated by traditional conservative ways according to the minimal displacements, without continuity damage of dorsal part of pelvic ring and with a nullity anatomic-functional disorders. In this group patients with marginal fractures of iliac crest the osteosynthesis has been performed by compressing screws. At pubic branch fractures in the cases with combined injuries of abdominal cavity and urinary tracts (a presence of epicystostomy required an early activation) a front stabilization with light type of clinic’s backbone apparatus has been performed. Later patients underwent physiotherapy keeping orthopedic regimen within 4–6 weeks.

In the second group of patients (B type) with rotary-unstable but vertically stable pelvis injuries the ways of mini-invasive transosseous osteosynthesis by our backbone and spoke-backbone apparatus were widely used (Fig. 1, 2). Taking into account the fact that there were no vertical displacements of pelvis half in this patients group and the presence of pelvis injuries on “open book” type they were easily eliminated in apparatus. The optimal way of treatments in this group was osteosynthesis by backbone apparatus. The duration of instrument fixation were 2 months. Patients were activated after 10–12 days. During 3–5 months patients moved with the help of cotters.

The third group was consisted of patients with severe rotary and vertically-unstable injuries characterized by complete separation of pelvic ring including back sacroiliac complex (C type). In patients of this group we have used the methods of submersible external osteosynthesis and the ways of percutaneous osteosynthesis of the acetabulum by threaded nails (Fig. 3). Physiotherapy with keeping orthopedic regimen has been conducted according to the duration of pelvic bones biological consolidation.

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**Fig. 1. Pelvic fractures fixation device**
Results and discussions
Totally there have been performed 247 operative interventions. There were used apparatus of external fixation for treating patients with pelvic bones fractures which were worked-out in the Republic Research Centre of Emergency Medicine. Estimating the reposition quality and recovery of pelvis functions at its non-stable fractures with the use of different types of surgical treatment and their combinations we have determined that the most qualitative reposition and stable fixation has been achieved in patients with B type fractures — 94 patients, С type — 70 people where there have been used the ways of transosseous and external osteosynthesis.

Late fates of patients operative treatment with non-stable pelvic fractures have been studied in 182 patients in the period from 6 months till 3 years. All patients have been operated in early post-traumatic period until 10 days. In all cases the stability of pelvic ring has been recovered and it has been proved by X-ray normal interrelations in symphysis pubis and in sacroiliac joint. Treatment results surely must depend on reposition quality. In 182 patients treated with the use of various types of the surgical correction the complete reposition has been achieved in 114 (62.9 %) cases and there were got excellent results. In 48 (26 %) cases the reposition was incomplete, an excellent functional result in this group was in 15 (31.2 %) patients, a good one — in 33 (68.8 %) patients. 20 (11 %) patients had bad reposition, in 13 (65 %) cases the result has been estimated as satisfactory one. In 7 (34 %) patients with vertical and rotary-unstable injuries there were bad results.

Conclusion
The diagnostics of non-stable pelvis injuries must be complex including clinical and instrumental investigation methods. Applying action algorithm subject to type and nature of injuries, using modern technologies allow to reduce the percentage of diagnostic mistakes and promote the choice of the most optimal treatment method.

Using backbone apparatus of external fixation meets a requirement of the stable osteosynthesis and it is an effective, small traumatic way of pelvis injuries stabilization at the early stage of traumatic disease. Early surgical tactics of treating non-stable pelvic bones fractures with the use of transosseous osteosynthesis and at the presence of indication in the combination with external osteosynthesis allowed to get positive anatomic-functional outcomes in 91.6 % cases.

So, applying an active surgical treatment combining internal and external osteosynthesis of pelvic ring at severe non-stable pelvic fractures with symphysis pubis rupture allows to perform direct reposition and reliable fixation of bones fragments and thereby to provide optimal conditions for early activation, social adaptation and recovery for patients.

References:
Genetic polymorphism of cytokines in patients with keloids

Abstract: An ongoing study examined the DNA of an interleukin-6 (IL-6) and interleukin-1 (IL-1) in patients with keloids. The results of the research of gene polymorphisms S395T gene IL-1β and G-174C gene IL-6 is a marker of increased risk of developing the disease, in particular, is clearly expressed with homozgyous genotype polymorphism G-174C IL-6 gene. Distribution of allele frequencies of genes IL-1β and IL-6, consistent with the law of the expected Hardy-Weinberg equilibrium (P > 0.05).

Keywords: Keloids, homozgyous genotype, gene polymorphism.

Currently, one of the urgent problems of dermatology are skin diseases associated with impaired collagen synthesis (keloid), and manifesting the development of various degenerative lesions of the skin, reducing the quality of life [1; 2].

Purpose of the study
Carrying out the molecular genetic studies of genotype polymorphism S395T gene IL-1β and G-174C IL-6 gene in patients with keloids.

Materials and methods
An ongoing study examined the DNA of an interleukin-6 (IL-6) and interleukin-1 (IL-1) in 25 patients with keloids and 20 apparently healthy donors (control group). All the subjects resided in the territory of Uzbekistan and had no family ties between them. Co-morbidities in patients with keloids was introduced diseases of the gastrointestinal tract (70%), iron-deficiency anemia (30%), diffuse goiter of varying degrees (23%).

In the first stage extraction was carried out according to genomic DNA of peripheral blood lymphocytes. Isolation of DNA from nuclei of lymphocytes was carried out according to the procedure described in the manual Sambrook et al., with some modifications.

Statistical processing of the results of research carried out by the method of variation statistics using Microsoft Office Excel-2003 program.

Results of the study
In order to determine the frequency distribution of genetic variants of the gene mutation G-174C IL-6 gene, we performed a molecular analysis of DNA among relatively healthy donors and patients with keloids [3]. In 25 patients and 20 apparently healthy donors, G allele of IL-6 gene (G-174C) was found 85% and 96% of cases, respectively (Table 1). CC allele gene IL-6 (G-174C) were observed respectively in 15% and 4% of cases. In assessing the characteristics of the distribution of genotypes and allelic variants of the IL-6 polymorphism (G-174C) in patients with keloid scars it revealed that the differences in the frequency of alleles and genotypes between patients examined men and women were invalid character. A comparative analysis of the

Genetic polymorphism of cytokines in patients with keloids

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