



Cuiavian University in Wloclawek

International scientific and practical conference

**PROSPECTS FOR THE DEVELOPMENT OF MEDICINE
IN EU COUNTRIES AND UKRAINE**

December 21–22

**Wloclawek,
Republic of Poland
2018**

International scientific and practical conference «Prospects for the development of medicine in EU countries and Ukraine» Włocławek, Republic of Poland, December 21–22, 2018. Włocławek: Izdevniecība «Baltija Publishing», 2018. 152 pages.

ORGANISING COMMITTEE

dr **Marek Zieliński**, Dean of the Faculty of Health Sciences of Cuiavian University in Włocławek;

prof. dr hab. **Waldemar Jędrzejczyk**, Faculty of Health Sciences of Cuiavian University in Włocławek;

prof. dr hab. **Ludwik Malendowicz**, Faculty of Health Sciences of Cuiavian University in Włocławek.

Each author is responsible for content and formation of his/her materials.
The reference is mandatory in case of republishing or citation.

ESTIMATION OF CLINICAL EFFICIENCY OF CARRYING OUT PLATELET-RICH PLASMA THERAPY FOR FRACTURES OF THE PELVIC BONES WITH POLYTRAUMA

Ivchenko D. V.

*MD, PhD, Professor,
Department of Traumatology and Orthopedics
Zaporizhzhia State Medical University*

Trufanov I. I.

*Postgraduate Student at the Department of Traumatology and Orthopedics
SI «Zaporizhzhia Medical Academy of Post-Graduate Education
Ministry of Health of Ukraine»
Zaporizhzhia, Ukraine*

Introduction. The urgency of the problem of polytrauma is due to the constant increase in the number of road accidents, armed conflicts, terrorist acts, accompanied by the emergence of a large number of victims with severe and extremely serious injuries. Severe injuries are one of the three main causes of mortality of the population, and in the category of people under the age of 40 years, this cause takes the first place, and among adolescents and young people this index reaches 80%.

Objective: To study the clinical efficacy of autologous platelet-rich plasma in patients with pelvic fractures combined with multiple and concomitant injuries.

Materials and methods. In the period from 2017 to 2018 in the department of traumatology with beds of polytrauma of the KU «Zaporozhie City Emergency and Urgent Care Clinic», 35 patients were operated on with lesions of the pelvis bones of varying degrees and fractures of other segments of the musculoskeletal system against the background of polytrauma. Gender composition: men 19 (54.29%), women 16 (45.71%), average age 46.64 ± 2.21 with a 95%– confidence interval (42.31-50.96).

In 22 patients (62.86%) road traffic injuries were noted, in 10 (28.57%) – household injuries, in 2 (5.71%) – industrial injuries and in another 1 (2.86%) – other reason. The severity of polytrauma on ISS scale of less than 17 points was found in 20 patients (57.14%), from 17 to 25 – in 12 patients (34.29%), from 26 to 40 – in 2 patients (5.71%), more than 40 – in 1 patient (2.86%).

All patients had pelvic bones injuries of varying severity, which were most often combined with fractures of the proximal femur on the background of traumatic brain injury – 17 cases (48.57%), with concomitant fractures of limbs of other localization – 12 (34.29%) with intra-abdominal trauma – 11 (31.43%), with vertebral fractures – 9 (25.71%), with chest trauma – 6 (17.14%)

Results. In the main group of patients whose treatment we used plasma enriched with platelets, radiographically visible adhesions of the key injured areas of the pelvic ring after 8 weeks occurred in 10 people (83.33%). In 1 patient (8.3%) fusion occurred after 12 and in 1 (8.3%) – after 16 weeks after surgery. In the control group, fusion after 8 week was detected in 14 patients (60.87%), in 8 (34.78%) –

after 16 weeks. The postoperative course in 1 patient (4.35%) was complicated by the absence of accretion after 16 weeks and the presence of a bone resorption cavity. In this patient, bone autoplasty was not applied due to the unsatisfactory condition of the fragments.

Control of splicing was carried out mainly by X-ray, however, the sensitivity of this method is relatively low. The presence of organized bone beams between the fragments can be recognized at an earlier date during CT, which allows early rehabilitation to begin. The number of unsatisfactory treatment results with or without free or vascularized bone grafting indicates on a depletion of osteoinductive and reparative bone tissue. One of the factors of treatment should be the stimulation of these processes, which is promoted by a number of active substances contained in platelet-rich plasma.

Conclusion. Reliably substantiated data were obtained according to the results of the analysis of contingency tables 4×4 and the calculation of χ^2 for the efficiency coefficient using the Wald formula (Chi-square 6.87 with $p = 0.009$), which indicate a better clinical positivity of the technique with an additional introduction to the treatment activated platelet concentrate as part of assessing the dynamics of fracture consolidation processes in patients with pelvic fractures in combination with multiple and combined injuries, allows us to predict much better outcome in these patients.