

15. THE INTERRELATIONSHIP OF EARLY VOLUME AND RESPIRATORY RESUSCITATION AND THE CLINICAL AND EVOLUTIONARY IMPACT OF CRITICALLY INJURED POLYTRAUMA PATIENTS.

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Introduction. Poly trauma continues to be a leading cause of death and disability in all age groups, especially young people. The death of polytraumatized patients is most often caused by lack of oxygenation of vital organs, spinal cord trauma, internal bleeding with the development of hemorrhagic shock or combinations thereof. Initial assessment and management of severely injured patients is a difficult task and requires a quick and systematic approach, which would be useful to increase the speed and accuracy of the clinical/paraclinical assessment process.

Aim of study. The research aims to identify the clinical-evolutionary impact in critically injured trauma patients as a result of early volume and respiratory resuscitation at the prehospital stage and in the Department of Emergency Medicine (DEM).

Methods and materials. The prospective study will be conducted in the period 2020-2023, on a sample of 160 critically injured polytrauma patients. The volume and respiratory status, the methods of volume and respiratory resuscitation in critically injured polytrauma patients during the pre-hospital and DCMU onset period will be evaluated.

Results. According to data from the literature, the polytrauma patient is a challenging case in the pre-hospital stage and in the emergency unit. Resuscitation of the polytraumatized patient is a therapeutic intervention that must be done quickly, consisting of essential steps that take place successively over time. Therefore, the resuscitation of vital functions as well as the evaluation of trauma-induced injuries must take place at the same time. Another component of early resuscitation of the critically injured polytrauma patient is ensuring optimal ventilation. The primary purpose of intubation is to ensure adequate ventilation and oxygenation and to ensure airway permeability. Rapid sequence induction seems to be the best method, however, several issues need to be clarified, such as who is best suited for the decision to intubate, which drugs and devices to use, and the ideal infrastructure for intubation services. Most of the available data come from retrospective studies, which therefore remain controversial regarding the proper use of tracheal intubation in patients who have suffered traumatic injuries. Adequate ventilation may influence the positive prognosis of patients with severe trauma. The Remote Risk Control Strategy is the concept and practical application or extension of the Risk Control Strategy to the prehospital stage, which today includes the administration of plasma, erythrocyte mass and platelet concentrate in a ratio of 1:1:1 and tranexamic acid in order to ensuring hemostasis by stopping the processes of fibrinolysis, supporting the formation of clot and increasing the formation of thrombin. Elements of this strategy are already being implemented in AMUP in Norway, Israel and the United Kingdom in patients treated with tranexamic acid. A prospective cohort study has shown reduced mortality, and the current European Guide to the Management of Severe Bleeding and Posttraumatic Coagulopathy recommends administering the first dose of tranexamic acid at the prehospital stage to patients in posttraumatic hypovolemic shock. The decision to apply the risk control tactic needs to be made in the DMU stabilization room. Johan Groeneveld, author of an editorial on the subject, published in 2010 in *Critical* which argues that it is difficult to establish the toxic effect of synthetic colloids in humans, most studies in this field are experimental, on animal model. Thus, in critical conditions, early volume replenishment in the first 12 hours is an essential condition for the correction of tissue hypoperfusion; Continuation of aggressive fluid administration 48-72 hours after injury, when microcirculation and capillary permeability is altered, leads to adverse effects.

Conclusion. The Risk Control Strategy is a multidisciplinary approach for polytrauma patients with major bleeding that includes several objectives to improve the prognosis and reduce mortality; permissive hypotension, hemostatic resuscitation through early use of blood preparations and components, control of hemorrhage, according to the European Trauma Registry (2008-2013), real polytraumas account for 12% of all cases but cause 1/3 of all deaths among hospitalized patients. The literature does not provide exact guidelines for fluid resuscitation and there is much controversy about the advantages and disadvantages of using colloids or crystalloids so it has been found that each patient is approached individually, ensuring resuscitation management to be chosen according to clinical / traumatic condition.