Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 3 Issue 4 April 2020

Mini Review

The Importance of Multidisciplinary Approach to Multi-Trauma Patients: A Compact Mini-Review

Ethem Unal*, Sema Yuksekdag and Abdullah Yildiz

Health Sciences University, Umraniye Education and Research Hospital, Department of Surgery, Istanbul, Turkey

***Corresponding Author:** Ethem Unal, Health Sciences University, Umraniye Education and Research Hospital, Department of Surgery, Istanbul, Turkey.

Received: February 07, 2020

Published: March 12, 2020

Abstract

Multidisciplinary team approach to the multi-trauma patients in emergency departments can help minimize morbidity and mortality. The importantce of team work among the general surgeons, orthopedists, neuosurgeons, radiologists, emergency medicine doctors, nurses and technicians are discussed in this brief review.

Keywords: Multitrauma; Team Work; Multidisciplinary Approach

Introduction

Trauma injury is the leading cause of death among young people below 45 years old. Co-existence of multiple traumatic injuries in the same patient is present in as many as 40% of trauma admissions [1]. Therefore, the presence of multiple simultaneous injuries can lead to significant disability, especially in the hands of unexperienced health workers or non-organized multidisciplinary teams. A multidisciplinary team involves general surgeons, intensivists, orthopedic specialists, vascular and cardiothoracic surgeons, anesthesiologists, diagnostic and interventional radiologists, urologists, neurosurgeons, rehabilitation specialists, otolaryngologists, plastic surgerons, trauma trained nurses and technicians. In these critical patients, it is important to prioritize the injuries based on their acuity, severity and urgency.

After first resusscitation under close monitorization, the assessment of neurologic functions, control of open fractures, and damage control surgery (DCS) exploration involving thoras-cic or abdominal cavities can be necessary. An important component of DCS is fluid resuscitation in correcting hypotension [2]. In the past, more fluid but less blood products were used to be employed. However, this approach was changed with early replacement of blood products (red blood cell-RBC, fresh frozen plasma-FFP and thrombocyte in 1:1:1 ratios) following saline or volume expanders [2,3]. Massive crystalloid solutions are not used as like in the past, and instead, blood products are used earlier now. In case of massive blood transfusions (4 - 6 U) are necessary, thrombocyte count should be kept above 100.000 and fibrinogen level should also be measured and kept above 200 mg/dL with cryoprecipitate replacements [4,5].

After the first resusscitation is completed, a rapid evaluation of thorax and abdomen has priority as an internal bleeding from a fractured spleen or a deep liver laceration will result in death. Intracranial bleedings and extremity fractures can wait a bit more in these critical situations or interventions can be made in the operating rooms, while the surgeons explorating the abdomen. All these evaluations and consultations should be made in coordination at the same time without any delay. As missing an internal bleeding from a solid organ, while fixating or spliting an extremity fracture will be a fault sonsuming the precious time which is vital for the trauma victim. Hemogram checks, routine blood biochemistry and radiologic scans in case of stabilization of the patient should follow. Recently, a rapid bedside focused assessment with sonography in trauma (FAST) has gained great popularity all over the world [6]. However, a whole body computerized tomography (CT) is the gold-

en standard in evaluation of all body at the same time [7]. Therefore, the radiology units should be closer to emergency rooms to avoid wasting time, especially in serious multitaruma cases.

The multidisciplinary approach involves not only the primarily responsible surgeons, but also the blood bank workers, nursing staff of the emergency room, opearting room and postoperative care wards including intensive care units, transportation personnels, social workers, pharmacists, and rmedical students, residents and fellows. Even a small change in the patients' s medical status should be informed to the senior health workers as any delay in recognition of clinical events can result in mortality. The outcome depends on successful integration of these specialties. Moreover, the designation of operating rooms with enough personnel and all sutures and surgical instruments ready at hand is also very important. Postoperative care in a surgical ward or intensive care unit is the integral part of above-mentioned team work. Multidisciplinary team meetings are very useful to improve the quality of care for these patients.

Conclusion

In conclusion, the main goal in an emergency room should be to save a life by not escaping the primary injury site affecting mortality. As the intraabdominal injuries such as deep splenic and liver lacerations or avusions, and great vessel injuries result in sudden hemadynamic instability due to huge amount of blood loss, related surgeons should be prioritized in the care of these multiple trauma patients. Consultations from the related medical and surgical branches should be started at the same time while in emergency department and a rapid transfer to the operating room is a must, if necessary.

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