

Prioritizing Between Circulation and Airway in Trauma Patients: Reaching A Consensus

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Advanced Trauma Life Support® (ATLS) course, a benchmark training program for the treatment of an acutely injured patients, emphasize the use of a “common language”. This includes ABCDE approach in primary survey where life threatening injuries are treated by priority. The initial three alphabets; ABC are the key components of resuscitation. Airway is given precedence over all other conditions. This is because of likelihood of a multiply injured patient dying of airway obstruction rather than circulatory compromise. This traditional approach has continued till date although new evidence against this is also reported in literature.¹

At present ATLS 10th edition is in use. According to it the management is based upon a vertical approach when single provider is available. However, in a more realistic scenario there are other professionals from medical, nursing and allied fields in a healthcare center to facilitate resuscitation by priority for trauma victims. In such a situation each member of the team is assigned a role related to an area. All tasks are performed under a team leader. In such a situation team members work horizontally while team leader supervises the tasks in a vertical manner.

Scientific knowledge is update based upon new research findings. In context of basic life support, the American Heart Association, ABC approach changed to CAB a long time ago.² Similarly, there are studies in context of trauma where circulation is considered a priority in patients who lose significant amount of blood.³ In this situation stopping the ongoing hemorrhage is far more important than securing the definitive airway. This situation is more common in

disaster situation, terrorists' attacks and battle field to name a few. Here a more rational approach would be to resuscitate by priority rather than following a traditional approach.⁴ It is important that providers must be competent enough to address this challenge. Ongoing significant hemorrhage can have detrimental effects on the body.

Ferrada et al in a trial compared prioritization of circulation over securing definitive airway in trauma patients. This was a multicenter international trial through Eastern Association for the Surgery of Trauma (EAST). With different arguments based upon the physiology as well as pathological changes associated with trauma it was suggested that circulation becomes priority when there is an exsanguinating ongoing hemorrhage. In such a situation loss of circulatory volume leads to significant hypotension which is a cause of instability. Many of these patients are irritable due to hypoxia and drug assisted endotracheal intubation is required when airway is obstructed or threatened. Use of a paralyzing agent to intubate the victim affects the physiological responses to hemorrhage. The vasoconstriction may be lost due to which body tries to compensates hypovolemia. This further worsens the condition. By controlling the ongoing obvious hemorrhage in conjunction with volume replacement during resuscitation more favorable outcome is expected. In addition, following endotracheal intubation and positive pressure ventilation, venous return to the heart decreases. This may culminate in cardia arrest. The choice of IV fluids and volume also matter. Early use of blood and its products for resuscitation is emphasized to minimize the use of crystalloids. The aim is to restore euvoemia and hemostatic resuscitation.⁵ In a literature review, Ferrada et al discussed the issue of prioritizing circulation over airway in a particular setting based upon the latest evidence.⁶

In United States, because of several incidents of mass shooting, a joint committee was constituted to make recommendations about improving the survival of the victims. This led to the development of documents called Hartford Consensus. Of the two documents the

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Hartford Consensus II provides directions so that no victim die from uncontrolled bleeding. These recommendations were then incorporated into various training programs. These are now part of “Stop the Bleed” Campaign. The purpose is to empower even laypersons to be able to control the hemorrhage. The American College of Surgeons has also incorporated this into the content of ATLS course.⁷ The program is has created a good impact.⁸ It includes simple measures like local pressure on the bleeding point, wound packing with ordinary and hemostatic gauze pieces and application of a tourniquet like that of Windlass type.

The ATLS 10th edition in Appendix C contains this information under the heading of ATLS in the operational environment (ATLS-OE). The alphabet X is added as eXanguinating hemorrhage (use of tourniquets) followed by ABCDE. The 11th edition is expected to contain this approach in its main teaching and training components. However, the skills related to the control of bleeding are already taught under the Circulation component of the ongoing courses.

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