

DAMAGE CONTROL HEMATOLOGY: *UTILIZATION OF A TRAUMA EXSANGUINATION PROTOCOL*

INTRODUCTION

Massive blood transfusion (MBT) is most commonly defined as complete replacement of a patient's blood volume within a 24-hour period. Despite significant complications and logistical problems associated with MBT, results of many studies have demonstrated significant survival rates that justify its use in trauma. In the absence of a pre-defined massive transfusion protocol, access to the appropriate blood products (and adequate volume of these products) may be significantly delayed. Without prompt replacement of these blood products, the resultant coagulopathy may become overwhelming and, not infrequently, lethal. Rapid intervention with appropriate clotting factors and platelets has been shown to actually decrease the overall utilization of blood products. In fact, the implementation of an organized policy to address exsanguinating hemorrhage in the trauma population has proven of benefit to both patient outcomes as well as blood product utilization. Cinat and colleagues demonstrated an increase in survival (from 16% to 45%) in patients with “exsanguinating hemorrhage” following the implementation of such a protocol at their institution.

PURPOSE

To define the process by which large amounts of pre-defined blood products may be accessed in an expeditious manner in patients with life-threatening injuries and massive blood loss. This protocol will standardize the type and manner of blood product request, as well as the rapid acquisition and delivery of these products to the trauma team.

INTERVENTION

To describe the process to expeditiously access large quantities of blood products for those trauma patients with injuries that result in rapid and massive blood loss. The purpose of this policy is to standardize the type and manner of blood product request and acquisition in certain clinical situations and to formalize the related system responses.

I. PROCEDURE

Initiation: The attending trauma surgeon will determine which patients (based on physiology or injury complex) warrant blood bank response beyond routine. The policy will be activated if the patient has on-going life threatening bleeding or CNS bleeding as well as the presence of one or more of the following criteria: Blood loss exceeding 1 BV, known hereditary or acquired hemostatic disorder of either plasma coagulation or platelet defects (platelet inhibitors). The attending will notify Blood Bank and activate the “Trauma Exsanguination Policy”.

Notifications: The attending must supply the Blood Bank Technician with the following information: attending trauma surgeon name, patient sex and approximate age, Medical Record #, Stat Name, and the location (must include OR room #) where blood is to be delivered.

Blood Bank will call OR to inform them that initial response products are en route and ascertain whether protocol should continue or cease. If they are told to continue, the next round of products will be prepared.

Initial Blood Bank Response/Delivery: Upon receipt of call from attending, the Blood Bank will prepare and dispense the following blood products as part of the initial response: (10) units non-irradiated PRBC's (uncross-matched), (2) units single donor platelets, and (4) units of plasma. Cryoprecipitate may be requested for patients with reduced fibrinogen.

II. FOLLOW-UP

Follow-up Blood Bank Response: Following the initial release of products, the following products will be delivered as they are prepared: (6) units PRBC's, (2) Units Platelets and (4) units thawed plasma. This cycle of dispensing follow-up products will continue until terminated by the attending trauma surgeon in the OR.

Blood Bank will contact OR room to notify them next round products are en route and get decision on whether or not to continue protocol.

For each response Blood Bank will notify OR when products are en route and ascertain whether or not protocol will continue.

Unused Products: It will be the responsibility of the Trauma Surgeon initiating the protocol to assure that products that are not transfused get returned to Blood Bank via OR staff.

***Platelets should be returned in the “side-pouch” bag and NOT on ice.

III. QUALITY REVIEW:

Trauma Exsanguination Protocol initiation will be a Quality Performance Indicator. All cases for which the Trauma Exsanguination policy is initiated will be reviewed as part of the Blood Utilization Committee QI/PI program.

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