VANDERBILT UNIVERSITY MEDICAL CENTER
DIVISION OF TRAUMA AND SURGICAL CRITICAL CARE

Massive Transfusion Protocol

Background: Protocolized transfusion has been shown to improve clinical outcomes as well as transfusion efficiency in patients who require massive transfusion (>10 u in 24 hours). This document provides guidelines for utilization of the massive transfusion protocol (MTP) at VUMC.

1. Patient selection
    a. Patients with current, ongoing, or impending massive blood loss should be considered for activation of MTP.
    b. Activation of massive transfusion protocol should be considered for patients who received greater than two units of blood in the emergency department.(1)
2. Activation
    a. MTP may be activated by the attending surgeon, intensivist or designated surrogate. If surrogate activates MTP, attending surgeon of record must be provided to blood bank (BB).
    b. MTP may be activated by trauma/surgical cc faculty, fellows and instructors; anesthesiology faculty; and selected surgical faculty ONLY.
    c. Upon suspicion of MTP activation, type and screen must be sent to BB as soon as possible.
    d. To activate MTP, call the BB at 2-2233 and provide the following information
        i. "This is Dr. _____ activating MTP….."
        ii. Patient name
        iii. Patient MRN. This will be repeated by BB personnel for verification purposes.
        iv. Patient age
        v. Patient gender
        vi. Current or intended location
3. Product breakdown
    a. Each round of MTP provides 6U PRBC, 4U FFP, 1 dose pack of platelets
    b. Repeat rounds of MTP contain identical product "doses"
4. Administration
    a. Products are delivered, and BB calls patient location to verify continuation of MTP. Default is to continue MTP until verbally discontinued by faculty physician.
    b. MTP boxes are intended to be given in their entirety until completed. If not all products are desired, strong consideration should be given to MTP discontinuation.
5. Endpoints/termination
    a. When appropriate endpoints are reached, the MTP must be discontinued to limit resource utilization.
    b. Most reliable transfusion endpoint is a collaborative decision based on operative field examination, laboratory results, and clinical parameters.
    c. Premature discontinuation of MTP should be avoided to minimize catch-up reactive transfusion.
6. Pitfalls, common errors
    a. Failure to send type and screen.
        i. T&S must be sent upon suspicion of MTP requirement.
    b. Returning platelets on ice.
        i. Cold temperature destroys platelets. Must be returned in cooler side pouch.
    c. Failure to identify significant hemorrhage, delayed MTP activation.
        i. Results in delayed resuscitation. Over-activation is expected.

d. Premature termination.
    i. Consider continuing MTP until patient stabilizes in the ICU.
e. Failure to provide entire box/dose.
    i. If not all products are required, d/c MTP and transfuse PRN.
    ii. Collaborate with intensivist/anesthesiologist regarding transfusion plan.
f. Reliability on laboratory tests alone for transfusion indication.
    i. Laboratory tests are unreliable in the hyperacute setting.
g. Inappropriate personnel activating MTP.
    i. BB personnel are empowered to refuse MTP to callers who are not authorized to activate protocol.

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1. Nunez, T.C., Voskresensky, I.V., Dossett, L.A., Shinall, R., Dutton, W.D., and Cotton, B.A. 2009. Early prediction of massive transfusion in trauma: simple as ABC (assessment of blood consumption)? *The Journal of trauma* 66:346-352.

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