Suspected Neonatal Alloimmune Thrombocytopenia (NAIT)

VUMC Blood Bank

Key contacts: Blood Center of Wisconsin Phone Phone 1(800)245-3117 x 6255 Fax (414) 937-6245

American Red Cross (ARC) Dr. C. Meena-Leist Phone: (502)558-1817 Email: Claire.Meena-Leist@redcross.org

American Red Cross Special Collections: Christy Hall Phone (615)346-7932/346-7935 Email: christy.hall@redcross.org

Page VUMC Transfusion Medicine (Pager 615-835-9743) for consultation on potential evaluation of suspected NAIT case.

If very high index of suspicion (well baby with profound thrombocytopenia) or maternal history

1.Coordinate with Transfusion Medicine to obtain HPA-1a negative platelets.

2. Order maternal testing for NAIT. Obtain 30 ml ACD-A whole blood from mother and 10 ml serum from mother. Complete BCW form.

VUMC Transfusion Medicine to expedite obtaining maternal NAIT testing results from BCW

VUMC Transfusion medicine will continue to communicate with NICU to provide ongoing platelet transfusion support and diagnostic support.

Rationale for development: Although thrombocytopenia can be seen in up to 1/3rd of NICU patients[1] most cases are mild and self limiting[2]. In suspected cases of NAIT, there is a immediate need for laboratory assessment followed by appropriate transfusion guidance.

The most commonly implicated antigen in NAIT cases is HPA-1a. Given that nearly 90% of Caucasians express the HPA-1a antigen, the concern arises in a mother with HPA-1b/1b and a biologic father that is HPA-1a/1a, resulting in a child that is HPA-1a/1b. Maternal alloimmunization to this platelet antigen can occur, resulting in potentially severe thrombocytopenia and dreaded intracranial hemorrhage. Thankfully, only 10% of pregnant females that are HPA-1b will alloimmunize when the biologic father is HPA-1a[3].

The VUMC blood bank will provide apheresis platelets while the laboratory evaluation is pending. The platelet dosing for a neonatal patient should be consistent with the pediatric blood ordering handbook, 10-20 mL/kg. The VUMC blood bank will attempt to limit donor exposures by reserving the remainder of the blood product, but recall the shelf life of a platelet product is 5 days.

Outside testing for NAIT evaluations is performed at BCW, and maternal samples of 30 mL of whole blood (ACD-A) and 10 mL serum are needed. The NAIT evaluation form must also be filled out. If the mother (and potentially father) do not have a VUMC medical record number, this needs to be accomplished before phlebotomy will draw a sample.

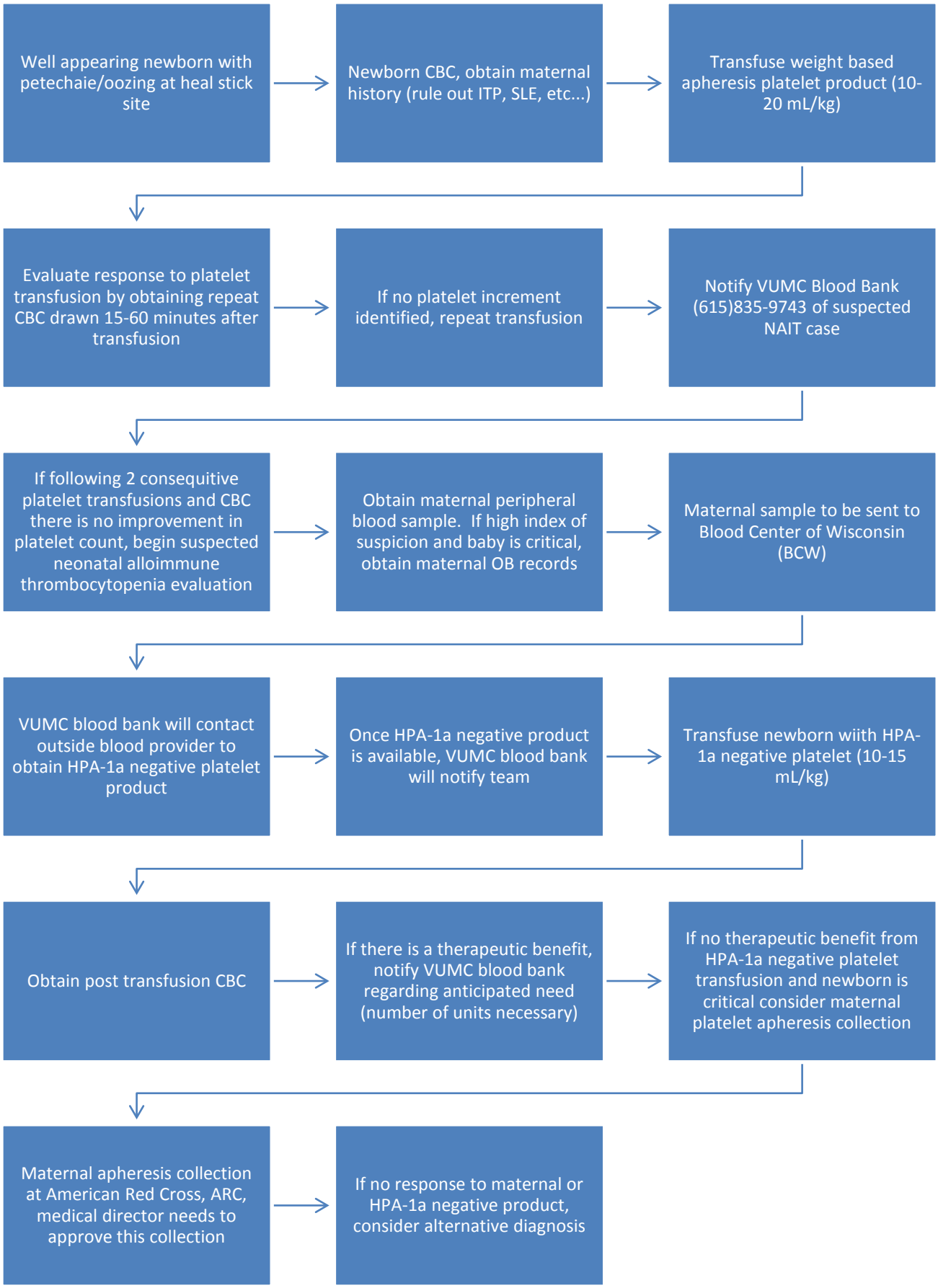
The VUMC pathology resident will fill out the appropriate ARC form and communicate the needs to the ARC. The ARC estimates that there turn-around time for locating HPA-1a/1a negative platelet products is between 24-48 hours. Other HPA subtypes (of which there are now 21 http://www.ebi.ac.uk/ipd/hpa/Table%202.html) are not routinely available (this is due to limited and costly HPA platelet donor testing).

Although there may be a strong desire for the clinical team/family to use the mother as a directed donor, please be advised this is NOT routine practice. Additionally, the medical director at the ARC would need to sign specialty forms allowing such a donation given the AABB Standard 5.4.1A (Page 57 28th ed.) for pregnancy to be a 6 week deferral. The maternal OB records, including infectious disease testing must be available if this heroic last resort effort is undertaken.

In order to assess the efficacy of the various transfusion strategies, a post-transfusion CBC must be drawn 15-60 minutes after the transfusion.

References:

1. Blood Reviews 2008;22:173-186.
2. Transfusion Medicine 2002;12:35-41.
3. Blood 1998;92:2280-7.


Well appearing newborn with petechaie/oozing at heal stick site
Newborn CBC, obtain maternal history (rule out ITP, SLE, etc...)
Transfuse weight based apheresis platelet product (10-20 mL/kg)
Evaluate response to platelet transfusion by obtaining repeat CBC drawn 15-60 minutes after transfusion
If no platelet increment identified, repeat transfusion
Notify VUMC Blood Bank (615)835-9743 of suspected NAIT case
If following 2 consequitive platelet transfusions and CBC there is no improvement in platelet count, begin suspected neonatal alloimmune thrombocytopenia evaluation
Obtain maternal peripheral blood sample. If high index of suspicion and baby is critical, obtain maternal OB records
Maternal sample to be sent to Blood Center of Wisconsin (BCW)
VUMC blood bank will contact outside blood provider to obtain HPA-1a negative platelet product
Once HPA-1a negative product is available, VUMC blood bank will notify team
Transfuse newborn wiith HPA-1a negative platelet (10-15 mL/kg)
Obtain post transfusion CBC
If there is a therapeutic benefit, notify VUMC blood bank regarding anticipated need (number of units necessary)
If no therapeutic benefit from HPA-1a negative platelet transfusion and newborn is critical consider maternal platelet apheresis collection
Maternal apheresis collection at American Red Cross, ARC, medical director needs to approve this collection
If no response to maternal or HPA-1a negative product, consider alternative diagnosis