



COPTN Data Review

AABB October 15th, 2018

Demographics: Neonatal data



- 16% of sites had an NICU (n= 90/580)
 - 40% Level 1 or 2
 - 26% level 3 or 4
 - 2% centralized service with multiple sites
 - Remainder unsure/ no answer
 - Beds: 42% had > 1-10; 15% had > 30 beds
- 56% (324/580) of sites delivered neonates on site
 - 20% < 100 babies per year
 - 22% > 1500 babies per year

Neonatal cords from deliveries



- What tests can be performed on cord (check all that apply)?
 - Frequent (> 89%):
 - ABO, Rh (98%),
 - weak D (88%),
 - DAT (94%),
 - (phenotype, eluate – forgot to include)
 - Infrequent (<20%):
 - Ab screen (17%),
 - passive anti-A/B, (20%)
 - NaoH, crossmatch (7%)

Neonatal Cords and testing methods



- **Majority of sites continue to perform cord tests via tube**
 - ABO: 86% - tube; 18% gel; 4%- solid phase
 - Antibody Screen: 6% tube; 17% gel; 3% solid; 71% not
 - DAT: 59% tube; 33% gel; 2% solid; 3% not
- DAT reagents
 - 22% - IgG only
 - 52% IgG onlcy
 - 9% IgG + complement
 - 15% Polyspecific followed by mono if positive

Cord results - DAT

- **33% of the sites (92/277) continue to do DATs on every cord sample received**
- CPS/ AAB – suggest only for O moms with neonates with jaundice
 - non-selective practice needs to stop



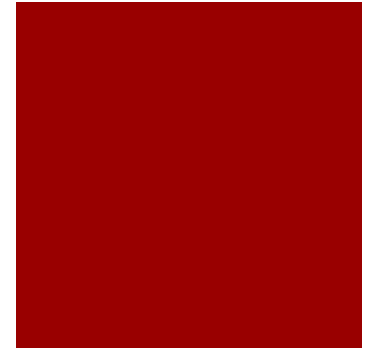
Which scenarios prompt DAT testing?

	N	%
1) Cords of all group O mothers	34	18
2) Cords of mothers with Abs	124	65
3) Cords of all Rh neg moms	98	52
4) On MD request	173	91
5) Cords of babies with maternal / fetal ABO incompatibility	44	25
6) Following review indicating hemolysis	48	23

Scenarios 2 and 3 should be at 100%
Scenario 1 and 5 should not occur
Scenario 6 is gold standard

Cord results

- Are requests for cord DATs screened before being performed? More often than I thought!
 - Yes 25% of sites
- Are hemolytic tests suggested? Rarely
 - No 93% of the time



Scenario: Neonatal Cord Rh neg mom

- 90% = ABO typing – why?
- 97% - Rh typing – should be 100%
- 66% DAT – should this not be at 100%?
- Screen 3%, phenotype 1%- should be 0



Scenario: Neonatal Cord Group O mother

- ABO – 57%; not needed – assume done to assess for ABO incompatibility
- Rh – 55%; likely linked to ABO
- DAT – 50%; r/o ABO and potential HDFN
- No testing- 30%



Scenario: Neonatal cord Maternal CSA

- ABO and Rh – 84% - Why?
- DAT – 84% - this should be 100% unless they are only doing if phenotype positive
- Phenotype – 34% only – this should be 100%
- Screen 11% - why on cord?



Duration of cord storage

- 31% up to 1 wk
- 21% up to 2 wks
- 27% up to one month

- Have there been studies assessing how long these are valid? What do the guidelines state?



Rh immune globulin

- 90% of centers dispense Rh immune globulin
- Routine antenatal (28 week) dose = 300 mcg (96%)
- Routine post natal dose = 300 mcg (76%); other 15%; 120 mcg (8%)
- Routine dose for potentially immunizing event = 300 mcg (68%); 120 mcg (5%); depends on GA (18%); Other – depends on FMH test
- Cord Rh testing performed before dispensing Rhig?
 - 62% yes; 14% no; 24% other



Fetal maternal hemorrhage testing



- FMH performed at 25% of sites surveyed; 40% do so at least once per day
- Initial method for detection of FMH
 - Rosette = 46%
 - KB = 43%
 - Flow = 2%
 - ** other = KB for Rh + and Rosette Rh –
- Method to detect FMH for Rh +
 - KB (72%); Flow (1%- 1 site); other (17%); no answer

Fetal maternal hemorrhage testing



- Primary method for quantification of FMH
 - KB (62%); flow (3%); Other
- KB reagents
 - Commercially prepared (67%); in house lab developed (25%)
- KB controls
 - Commercial QC material (6%)
 - In hours lab developed controls using patient samples (87%)

Fetal maternal hemorrhage testing



- Are + KB followed by flow? Y (12%); N (81 %)
 - When? + rosettes; + KBs; only working hours
- Antibodies used for Flow? Anti F (40%); Anti-D (4%); anti-CA (0%); unknown referred out (28%)

Fetal maternal hemorrhage



- Volume of hemorrhage
 - Volume fetal RBC (48%)
 - volume of fetal whole blood (24%)
- Formula to calculate volume of FMH
 - AABB/ CAP formula (57%); Mollison (5%); other 23%
- Adjustments made to account for maternal blood volume – Y (5%); N (68%); no answer (27%)

Calculating dose of Rhlg



- Dose calculation – calculate volume of FMH and
 - Round to next vial size (25%)
 - Round to nearest vial size (up or down) (2%)
 - Round to nearest vial size (up or down), then add another vial (21%)
 - Outside of lab (25%)
- Follow up FMH testing to see if initial dose worked?
 - Yes (9%) ; No (83%); NA (8%)

Highlight summary

- Majority of sites do cord testing via tube
- 33% of sites perform universal DAT testing
- Cord testing – the indication and need to test cords needs to be standardized
- FMH testing – 46% rosette; 43% KB; 2% flow
- Calculation of additional Rhig for FMH – diverse

- Lots of variability exists; standardization of best practice is needed

