**NOTE 8**

**PATIENT 1002**

**DATE: 3/8/20**

**Requesting Physician/Service**

NICU

**Reason for Consultation**

Abnormal TRECs

**History of Present Illness**

Baby (triplet A) is a 19 day old ex-27 and 4/7 week baby with prenatal diagnosis of CDH and PDA s/p PDA PDA closure 2/27 and L sided CDH repair on 3/6. He is currently in the NICU on HFJV, NPO with recent ultrasound showing aortic thrombus. From an infectious standpoint he was on Ancef postop, and there was some concern for CMV given thrombocytopenia, however urine CMV negative. No other infectious concerns.  
  
Patient had abnormal TRECs on newborn screen x2 with results as follows:  
  
Initial NBS, collected 2/17/20 was OOR with TREC <252 copies/ul (ref range >=252 copies/ul)   
2nd NBS, collected 2/19/20, was OOR with TREC <252 copies/ul (ref range >=252 copies/ul)  
  
Because of this, additional immunology labs were sent and notable for significant T cell lymphopenia (CD3 538, CD4 366, CD8 166) with normal NK and B cell populations. Memory panel pending.

**Review of Systems**

10-point review of systems negative except as noted in HPI

**Physical Exam**

Vitals & Measurements

**T:**36.6  °C  (Axillary)  **HR:**188 (Monitored)  **RR:**0  **BP:**43/18  **WT:**1.03 kg

Deferred, primary team at bedside after procedure.

**Assessment/Recommendations**

Patient is a 19 day old ex-27 week baby boy currently admitted for management of CDH s/p repair on HFJV. Immunology was consulted due to abnormal TREC on newborn screening x2.   
  
T cell receptor excision circles (TRECs) as measured on the newborn screen are a surrogate marker of T cell output from the thymus. Low TRECs are quite sensitive for SCID, however can also be seen in a variety of clinical scenarios not associated with a primary immunodeficiency including prematurity, conditions associated with thymic hypoplasia such as DiGeorge (22q11 deletion), or causes of secondary lymphopenia such critical illness, surgery, or medications, a number of which are likely implicated here.   
  
We would expect the lymphocyte compartment to recover over time and with clinical improvement, however still recommend labs, as outlined below, to better characterize Patient's lymphopenia. Infants with secondary lymphopenia are not thought to have the same infectious risk as those with primary or intrinsic immune defect, however we note that Patient's lymphopenia is significant (CD3 <600, CD4 <400). Therefore, if the remainder of this workup is not reassuring or T cell compartment does not recover as expected, antibiotic prophylaxis could be considered.  
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In summary:  
- We will follow-up T cell memory panel (pending from 3/7)  
- Please send T cell mitogen proliferations, ordered in power chart  
- Please repeat lymphocyte subsets in 2-3 weeks or when ALC normalizes  
- Please hold all live vaccines (rotavirus, MMR, VZV) until Patient can demonstrate adequate specific antibody response to inactivated vaccines (to be checked around ~6 months of age)  
  
  
Thank you for this consult. Recommendations discussed with the patient and family, primary team and Dr. Adams, Immunology attending. Please note that all recommendations are preliminary until attested by attending. Please do not hesitate to contact us if questions arise. We will continue to follow with you.   
   
Laura Marshall, CPNP  
Allergy,Immunology, Rheumatology  
p. 2051  
  
  
I saw and examined this patient with Laura Marshall, CPNP and reviewed pertinent data.  I spoke to the family.  Assessment and recommendations were made under my direct supervision. This note, which I edited, reflects our joint findings and management plan.  
  
Fred Adams, MD  
Attending in Allergy and Immunology

**Problem List/Past Medical History**

Ongoing

Congenital diaphragmatic hernia

Failure to thrive in infant

Neonatal respiratory failure

Premature infant

Historical

No qualifying data

**Procedure/Surgical History**

No Procedure History

**Allergies**

No Known Medication Allergies

**Medications**

Inpatient

acetaminophen, 7.5 mg = 0.75 mL, IV, Q12hr

ampicillin, 37.5 mg = 0.08 vial, IV, Q12hr

caffeine (caffeine citrate), 7 mg = 0.7 mL, IV, Q24hr

cefepime, 20 mg = 1 mL, IV, Q24hr

D20W 500 mL + sodium ACETATE, IVF 25 mEq + heparin, IVF 250 unit

DOPamine infusion 40 mg [5 mcg/kg/min] + D5W 50 mL

EPINEPHrine 0.5 mg [0.03 mcg/kg/min] + D5W 50 mL

fat emulsion, intravenous 11.28 mL (Smoflipid 20% intravenous emulsion 11.28 mL), 11.28 mL, IV

heparin flush (heparin Flush 10 unit/mL), 20 unit = 2 mL, IV, Q8hr, PRN

hydrocortisone, 0.8 mg = 1.6 mL, IV, Q8hr

metroNIDAZOLE, 5.2 mg = 1.04 mL, IV, Q12hr

morphine (morphine IV), 0.072 mg = 0.04 mL, ICU-IV, Q1hr, PRN

morphine infusion 12.5 mg [0.096 mg/kg/hr] + D10W 50 mL

Parenteral Nutrition., 55.2 mL, 55.2 mL, IV

sterile water diluent WITH additives 50 mL + heparin, IVF 25 unit + sodium ACETATE, IVF 8 mEq

Home

caffeine (caffeine citrate 20 mg/mL intravenous solution), 7 mg, IV, Q24hr

erythromycin, Eye Both

hydrocortisone, 0.7 mg, IV

phytonadione (Vitamin K1 1 mg/0.5 mL injectable solution), Subcutaneous, 1time

**Social History**

Siblings currently admitted at HOSP 1

**Patient Language**

Preferred Language:

Interpreter Needed (Patient): No