

Hyper Bill

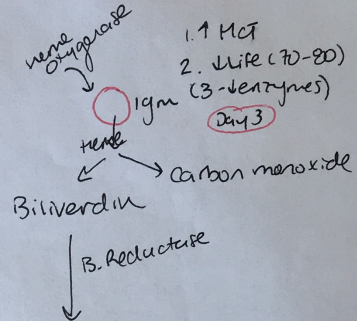
Kernicterus: Basal Ganglia + CN nuclei

- CD
- Auditory
- & Upward gaze
- Dysplasia of primary teeth

TSx:

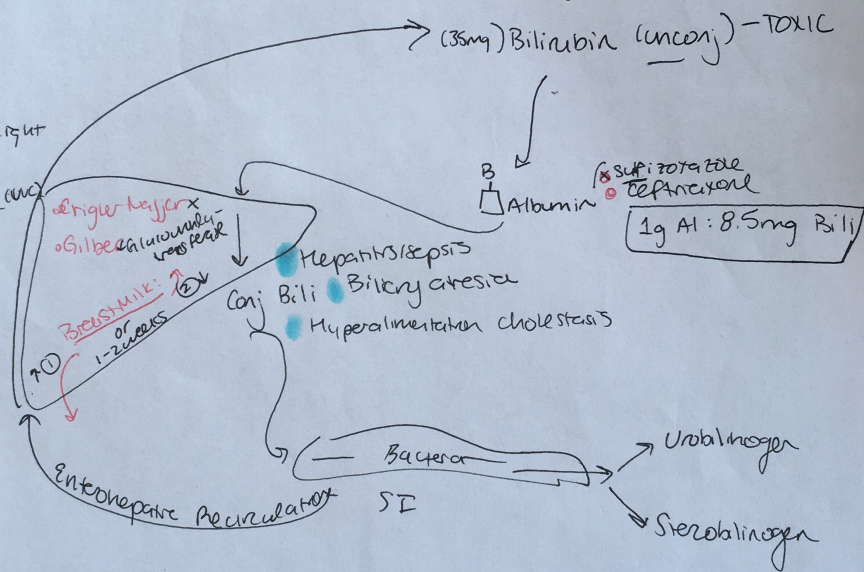
- Jaundice
- lethargy
- hypotonia
- ↓ activity
- poor suck

Physiologic / BF



Tx:

1. ↑ freq. feed, window light
2. Phototherapy
3. Exchange transfusion (mc) → HIVG if isoimmune hemolytic dz



Inconjugated Hemolysis:

- ↑ RBC breakdown:
 - G6PD, spherocytosis
 - Cephalohematoma
 - ABO incompatibility
- ↑ RBC stores
 - Polycythemia
 - DM mothers

Conj: D. Bilirubin (70% total)

- neurotoxic, but bad underlying

○ needs w/lyp:

- Liver enzymes
- Bx
- Metabolic screening
- Hepatic US
- Sweat chloride

- CMV, HIV, HSV
- Dubin Johnson, Retter
- Hypothyroid
- CF (meconium)

Tx: ursodeoxycholic acid (↑ excretion, ↓ spurs)

TSx:

- pale stool
- dark urine

Visible Jaundice:

- Adults: >1.3
- Infants: >5

Dermal Zone of Hyperbilirubinemia



<u>Zone</u>	<u>Range of TSB (mg/dL)</u>
1	4.3 – 7.9
2	5.4 – 12.2
3	8.1 – 16.5
4	11.1 – 18.3
5	>15

Workup

- Total and direct serum bili
- Blood type
- Rh
- Coombs on infant and mother
- Smear
- Reticulocyte count
- H&H
- If Prolonged or >2 weeks consider:
 - LFTs
 - TORCH workup
 - Sepsis workup
 - Thyroid studies (hypothyroid)
 - Metabolic workup
 - Liver Ultrasound

Phototherapy

Blue light is best!

- Increase fluids by 10-20%
- Check bilirubin q12-24 hours
- Stop when bill level is at $13 \pm 1\text{mg}\%$ in term and $10 \pm 1\text{mg}\%$ in preterm
- Check 12-24 hours later for rebound
- *After phototherapy have to do serum*

Side effects of phototherapy:

- Increased water loss
- Diarrhea
- Retinal damage

- Bronze baby, tanning
- Mutations in DNA? Shield the scrotum
- Disturbance of mother/baby contact

Exchange Transfusion

Technique

Make the infant NPO

Place UAC/UVC

Use type specific pRBC (Rh- in Rh sensitized, O type in ABO sensitized)

Double volume exchange: $\text{Weight (kg)} \times 80\text{cc/kg} \times 2$

Exchange in 5-20cc increments depending on baby size (<5% of blood volume)

Indications for Early Exchange

- Hydrops in known sensitized infant
- In Hemolytic disease: Cord bili >4.5 and Hb <11
- Serum bili rising >1mg/dl/hr on Phototherapy
- Hb 11-13 and bili rising 0.5mg/dl while on phototherapy

Complications

Bleeding, Thrombocytopenia, loss of factors

Infections

Hemolysis

GVHD

Neonatal Jaundice: Other treatments

- Phenobarbital: ↑ conjugation
- Oral agar: ↓ enterohepatic circulation
- Metalloporphyrins: inhibit bilirubin production.
 - competitors of heme oxygenase
- IVIG: inhibits hemolysis.
 - (binds to FC receptor of reticuloendothelial cells)