Kentmann - 6/7/39

Pigments

RE system → Liver → Bile passages → Intestine

Hemoglobin ⟶ Bilirubin ⟶ Urobilinogen

Urobilinogen → Liver: reutilized or reexcreted.

Urobilinogen → Part excreted in stool (Stercobilinogen)

Urobilinogen → Partly enters general circ. → Urine

Urobilinogen = Stercobilinogen (colorless)

↓ oxid ↓ oxid

Urobilin = Stercobilin (brown)

↳ imparts characteristic color to feces

Jaundice - retention of bilirubin in body fluids measured by direct detn of bilirubin in bl. stream, or icterus index.

Icterus index = arbitrary, comparison c̄ st. soln's of $K_2Cr_2O_7$

Ict index 1 = 0.1 mg bilirubin/100cc

normal 6-8

Upper limit 10.

van den Bergh is direct detn of bilirubin difficult to determine in normal state.

Carotene + other pigments may throw off the ict. index.

Poor agreement between van den Bergh & I.I. with high values.

direct v.d Bergh - bile has passed through hoovercells

indirect " - " " not " " " "

Blood examin is best index of jaundice. Urine gives good data.

Index must go to 15 to be recognized clinically.

(1) With primary or hemolytic anemias: II ↑, urobilinogen in urine & stool ↑. (2) In hypochromic microcytic anemias: II ↓, urobilinogen ↓.

(bile in urine) (no bile in stool)

With biliary obstruction:

(3) complete: bilirubin in bl ↑, in urine ↑. no urobilinogen in urine or stool.

(4) In " : II ↑, urobilinogen in urine & stool ↓.

(5) Incomplete obstruction c̄ liver damage: urobilinogen in urine ↑ in stool ↓, II ↑ due to poor secretl. in liver

a little pigment does leak through from blood but common lab. tests are insufficiently sensitive.

(6) Comp. obstr. c̄ infection in biliary tree. Bilirubin → urobil. can go at infected (c̄ colon bacilli) area. ∴ urobilinogen in urine ↑ (due to bl. absorption), none in stool.

Toxic hepatitis = 4 or 5
Infectious " = 6
Ca of common duct, head of pancr = 3
Stones never produce complete obstr.
nor do even the severest liver injuries.
There may however be transitory paresis of complete obstr.

Bilirubin is never reabsorbed from GI as such. Always converted to urobilinogen