



—BELMATT—  
HEALTHCARE TRAINING

# Managing LFTs

Parmy Deol

# Managing LFTs

- History and examination
- Investigations
- When to refer

# Liver function

- Bilirubin
- ALT
- Alkaline phosphatase

- Bilirubin
- Breakdown of haemoglobin
  - Spleen
  - Bilirubin transported attached to albumin
  - Uptake by liver
  - Conjugated and excreted in bile
  - Stercobilinogen and urobilinogen

# LFTs-source

- ALT hepatocytes
- Alkaline phosphatase- ALP
  - Biliary system
  - Bone
  - Placenta
- Gamma GT- biliary system/ alcohol
- AST- hepatocyte
  - Used as AST?ALT ratio mainly
  - $AST/ALT > 2$  suggestive if alcohol liver disease

# Synthetic function

- Albumin
- Prothrombin Time- PT

# Raised isolated bilirubin

- Increased bilirubin production
  - Hemolysis
- Decreased uptake in the liver
  - Inborn problems

# Isolated bilirubin investigations

- Split bilirubin- conjugated/ unconjugated
- Reticulocyte count
- Gilbert's syndrome



# Obstructive Jaundice

- Gallstones- short painful history
- Ca Pancreas- indolent painless history

# Hepatic Jaundice

- **Bili increased.**
- **ALT increased ++**
- **ALP normal or mildly elevated**
  
- Short history
- No signs of CLD
- Causes- Hep A/B
- EBV
- CMV
- Paracetamol overdose
- Autoimmune
- Pregnancy

# Isolated raised ALT

- Most likely fatty liver/ alcohol
- Needs complete liver aetiology screen
- Check AST/Gamma GT
- USS
- Biopsy if ALT >twice normal

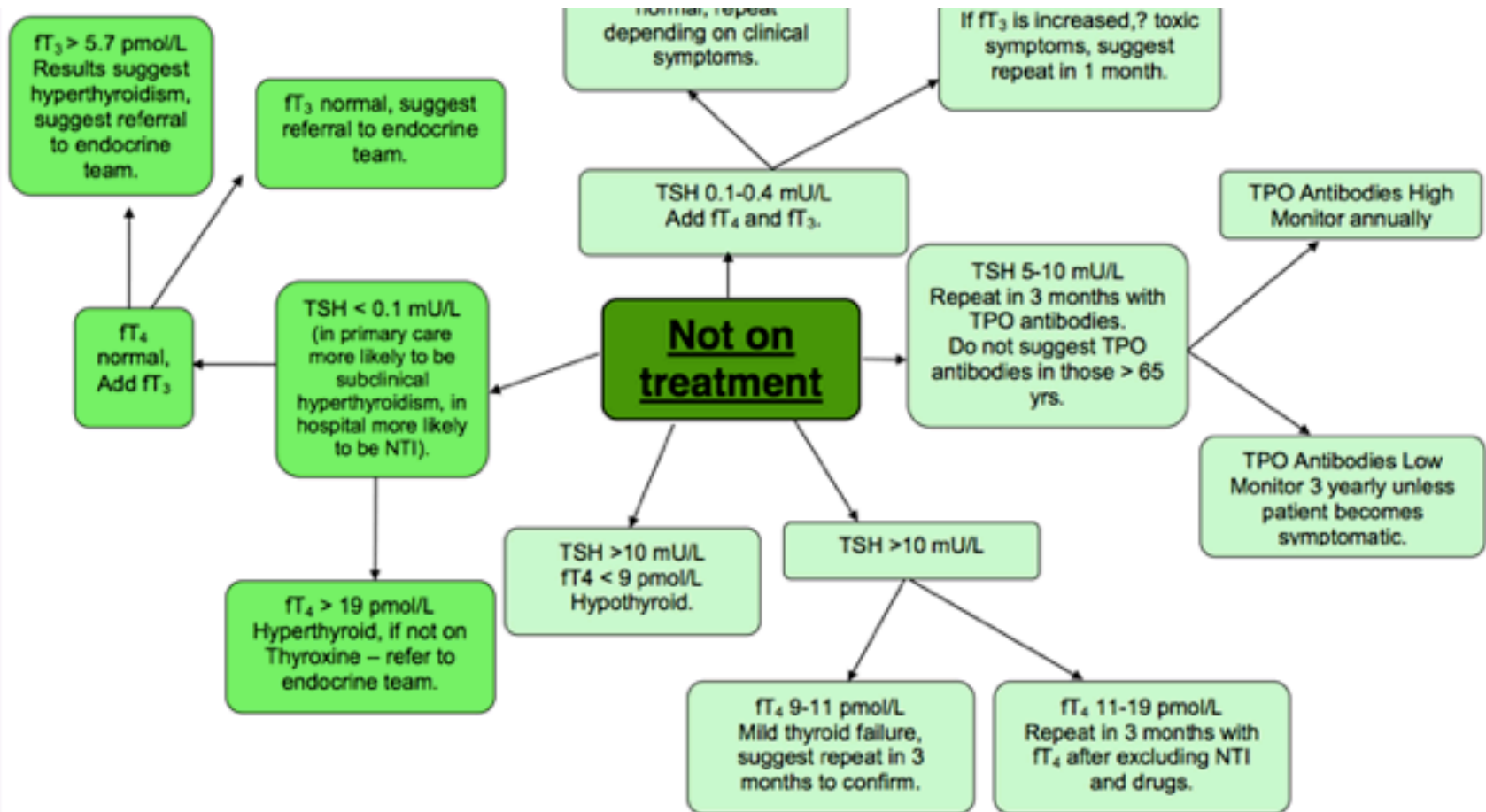
# Isolated raised ALP

- Ensure origin
  - ALP isoenzymes
  - Gamma GT
- USS
- If of bony origin
  - Ca/Vitamin D/PTH

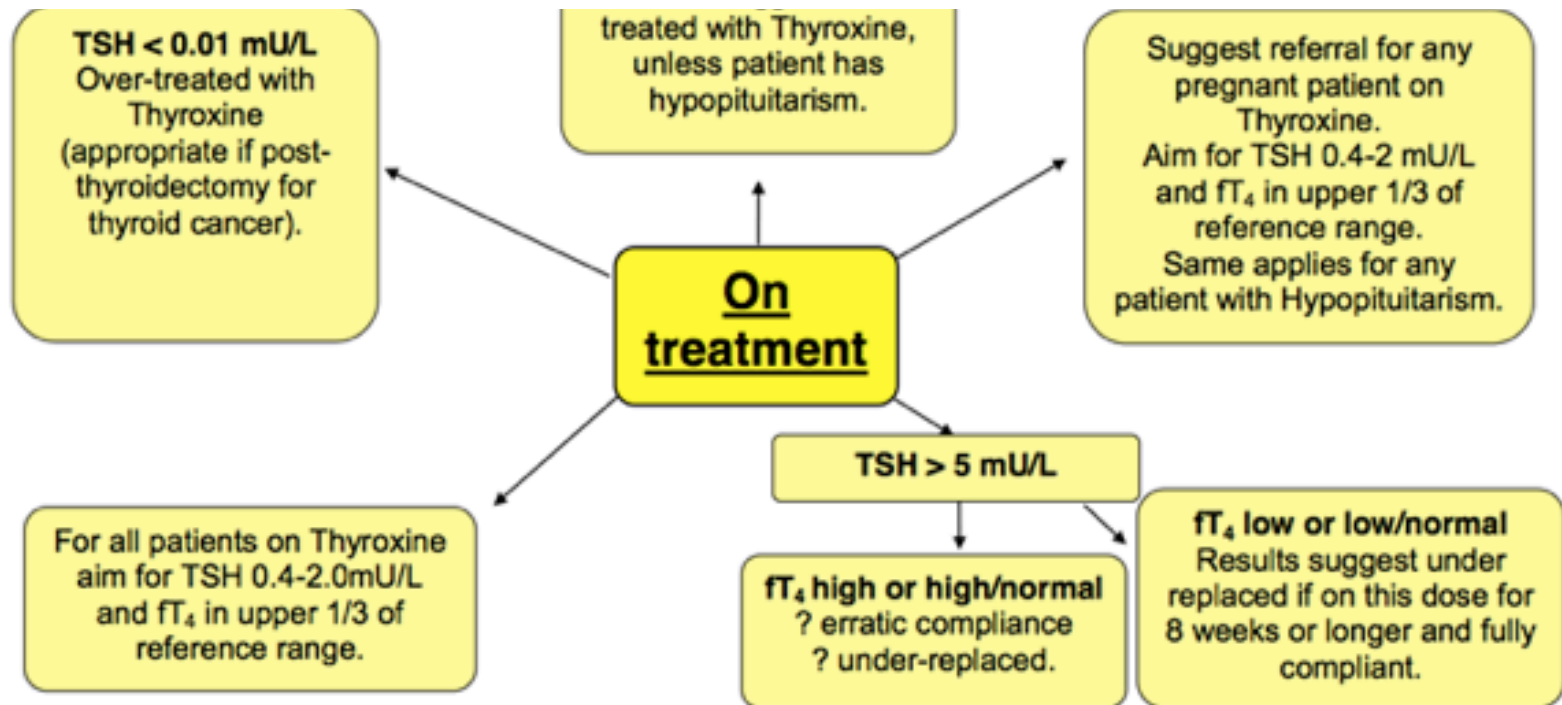
# Medication

- NSAIDs
- Flucloxacillin
- Statin
- Anti-epileptic
- TB drugs
- Co-amoxiclav

# Managing TFT



# Managing TFT



## Additional Information:

- Low ft4 without a rise in TSH – add prolactin, FSH, LH, Oestradiol/Testosterone, Cortisol – if results suggest hypopituitarism, suggest referral to Endocrine team
- Trimester related reference ranges are available on DB desk.
- Minimum of 8 weeks for TSH to stabilise after introduction/change of dose
- Suspect assay interference with any unusual pattern.
- Refer to Drug effects sheet when required

# Case 1

- Alexa is found to have a High TSH 12, with a low T4,
- ► Diagnosis? Specific Action?
- ► A) treat with thyroxine
- ► B) do nothing
- ► C) repeat in 3 months



# Case 2

- ► Mary is found to have a High TSH of 9.1 with a normal T4
- ► A) treat with thyroxine
- ► B) do nothing
- ► C) repeat in 3 months

# Case 3

- You are checking your colleagues bloods on a Friday pm,
- ► You see that this patient has a TSH of  $<0.02$  and a T4 of 60. (raised)
- ► What is the diagnosis?
- ► What other tests are helpful?
- ► Other Questions to ask?
- ► Treatments?
- ► Cautions?