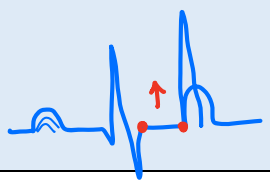
PR ↑ common finding

ECG changes in electrolyte abnormalities seen in kidney disease

Hyperkalaemia	Hypokalaemia
K ↑ 	K ↓ 
Tall Tented T	T wave inversion
STE (MI, acute pericarditis, variant A)	ST depression
P wave ⊖ (A.FIB, Sick Sinus Syn, K ↑)	Pseudo-P- pulmonale
QRS wide / broad > 100 msec	Prominent U wave
 sine wave pattern	Prolonged QU interval <1.5 meq: diaphr. paralysis
death: DIASTOLIC CARDIAC ARREST	Rx: KCl + IVF → Cal. chloride ☺

K+: 7.0 meq/L

K+: 8.0 meq

U — delay (R) of papillary muscles

Rx:
1. IV b/. Cal gluconate (ANTAGONISM)
2. REGULAR insulin 10 U + 25%–50% D infusion
   K+ ↓: 0.5–1 meq/hr [K+ INFLUX]
   most effective to lower K ↑
3. Neb c salbutamol [K+ INFLUX]
4. IV LASIX (KALIURIA)
5. K+ binders: PATIROMER
6. Refractory K+: H.D

☹ 1. Cal. CARBONATE

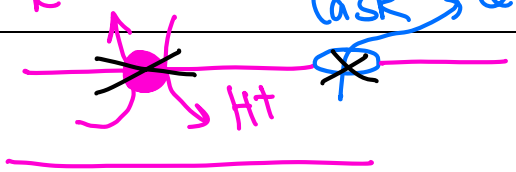
* Not routinely used in K ↑ ⇒ Na bicarbonate

Renal tubular acidosis

Type 1

Causes: _____ and amphotericin B

Mnemonic: Alpha can't acidify, Stones Fly and potassium says bye

Defect in alpha intercalated cells	Inability to acidify urine and urine pH> 5.5
Impaired function of H-K ATP ase	
Low urinary citrate and alkaline urine	2. NEPHROCALCINOSIS 3. KALIURIA : Hypokalemia
Can't excrete H+	

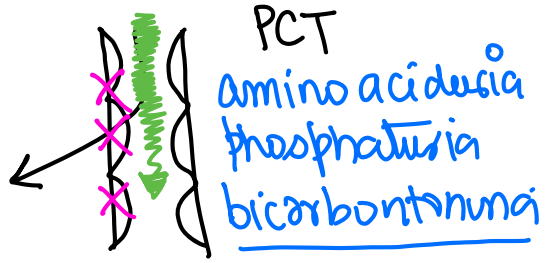
Type 2

Causes: Fanconi syndrome, Wilson and multiple myeloma

-Impaired bicarbonate resorption from PCT

-Serum bicarbonate: <15 meq/L

- Salt loss occurs – increased distal sodium delivery- hyperaldosteronism and hypokalemia



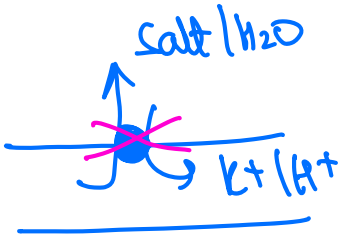
Type 4

Cause: D. nephropathy

High sugar damages the JG apparatus plus tubulointerstitial fibrosis damages principal cells in collecting duct which is the site of aldosterone resistance

ENac: Resistance to aldosterone

Hyperkalaemia with inability to acidify urine



all causes of RTA: NAGMA

(few hrs) * acute onset : fast correction
(days) * chronic onset : slow correction

Electrolytes

oat cell Ca lung, legionella, carcinoid Tumor

Hyponatremia

osmotic demyelination syn

Fast correction of chronic hyponatremia leads to stroke like feature called ODS

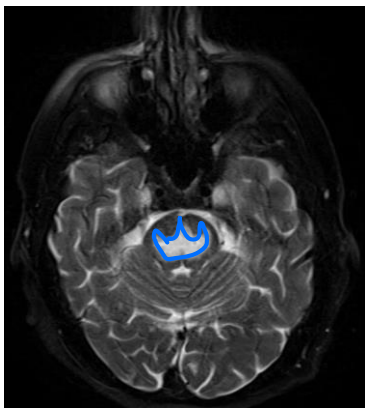
Symptoms usually appear **2–6 days after correction**

Mild	Moderate	Severe
Confusion	Quadriparesis	Locked-in syndrome
Dysarthria	Spastic paralysis	Conscious but cannot move limbs
Dysphagia	Pseudobulbar palsy	

corticospinal

(CANT SPEAK, EAT, DRINK)

MRI findings of ODS shows trident sign



Q. 28-year-old male collapses at the finish line of a full marathon conducted in hot weather. He is confused and has a generalized tonic-clonic seizure in the emergency department. On examination: BP: 110/70 mmHg, HR: 96/min. History reveals he consumed excessive plain water during the race. Labs show

- **Serum sodium: 118 mEq/L**
- **Serum osmolality: low**
- **Urine osmolality: elevated**

* Na^+ ↓: excessive sweating

acute onset hyponatremia → CNS + features

What is the most appropriate immediate management?

a. Fluid restriction and slow correction with normal saline
b. 3% hypertonic saline bolus (100 mL over 10 minutes)
c. 3% hypertonic saline infusion with slow correction @6 meq per 24 hours
d. Demeclocycline therapy

? lung malignancy

Q. A 62-year-old chronic smoker presents with fatigue, headache, and progressively increasing confusion for 10 days. He has lost 6 kg over the last 3 months. Examination reveals decreased breath sounds over the right upper lung field and disoriented patient.

Investigations:

L lung MASS : collapse lung segment

- **Serum sodium: 118 mEq/L**
- **Serum osmolality: Low**
- **Urine osmolality: High**
- **Urine sodium: Elevated**
- **Chest X-ray shows a right hilar mass**

SIADH: d/t lung MASS

ADH ↑↑: H_2O ↑↑ Na ↓

chronic Hyponatremia

What is the most appropriate management?

a. 3% hypertonic saline bolus (100 mL over 10 minutes)

b. 3% hypertonic saline slow correction not exceeding 6–8 mEq/L per 24 hours

c. Rapid correction with normal saline infusion

d. Demeclocycline therapy as immediate management

Q. 55-year-old patient of lung cancer admitted for work up developed seizures. Labs shows Na= 120 meq/L, serum potassium = 4.0 meq/L, Calcium 10 mg/dl. Weight = 60 kg. Calculate the total correction to be given to this case over the next 24 hours?

a. 180

b. 360

c. 600

d. 720

Ch. Hyponatremia

VERSION 1

(desired value − actual value) × TBW

(126 − 120) × TBW

6 × 60 × 0.5

TBW = wt × 0.6 ♂

0.5 ♀

VERSION 2:

Total CORRECTION ⇒ (140 − 120) × 60 × 0.5

20 × 30

600 meq/l

Oat cell Ca lung, carcinoid Tumor
Legionella
meningitis, Encephalitis, brain abscess
CEREBRAL Toxoplasmosis

Lab status in SIADH

Serum sodium H_2O ++	**Low** EUVOLEMIC Na↓
Serum osmolality U.Osm ∝ 1/P.Osm	**Low** DILUTE ↓
Urine osmolality	**High** CONCENTRATED ↑
Urine sodium	**>40 meq/L due to ANF liberation)** H_2O ++. Rt atrium stretch ⊕: ANF level ↑ : natriuresis
Volume status Rx: —	**Euvolemic** 1. FLUID RESTRICTION 2. SALT CAPSULES 3. (NATRIXE) VAPTANS

WATER
V2

(if unconscious/unresponsive/seizures ⊕: 3% saline)

Electrolyte imbalance	Possible leading Cause of death	Intervention
Hyponatremia <125	SEIZURES	3% saline < bolus: A infusion: C
Hypernatremia >158 — ELDERLY — neonates	SEIZURES	5% DEXTROSE / N/2 in 5%-D
Hypokalaemia <1.5 meq	D. PARALYSIS	KCL + IVF 1amp = 10 ml kcl = 20meq
Hyperkalaemia >8.0 meq	Cardiac ARREST diastolic : Cal. gluconate	20 meq → 0.25 meq/L ↑ KCl
Hypocalcaemia <7mg/dL	LARYNGOSPASM : cal gluconate	
Hypercalcemia >13mg	SYSTOLIC ARREST : (systolic)	1st line: NS + lasix Ibandronate / Steroids
Hypermagnesemia >10 meq	Asystole, bradycardia and Nm paralysis	Calcium gluconate iv
Hypomagnesemia	Ventricular arrythmias and tetany like – carpopedal spasm : Torsades de pointes	Mg SO4 iv

PRITCHARD Regimen: eclampsia : 14g. ✓
* 4g (20%) iv + 5g (50%) im in each buttock ✓

DTR ↓ : most reliable sign
RR ↓
U.O ↓

RTA

1	2	4
SJOGREN LAMB	WILSON expiry date: Tetracycline Fanconi syndrome	D. nephropathy
DCT # α intercalated cell ↓	PCT # Lining of PCT	CD # Principal cells ENac # ↓
INABILITY TO acidify urine - nephrocalcinosis - K ↓	Aminoaciduria KALIURIA phosphaturia	INABILITY TO acidify urine – K ↑

HAGMA

K: KETOACIDOSIS
U: ATN, AGN, AKI, CKD
L: LACTIC ACIDOSIS
T: TOXINS

NAGMA

D – diarrhea
R – RTA 1, 2, 4
F – FISTULA
U
S
E
URTEREO SIGMOIDOSTOMY (divert urine into colon)

K↑ ☹

$(Na^+) - (Cl^- + HCO_3^-)$

$(140) - (106 + 24) = 10$ meq

* (N) AG = 6 - 12 meq/L

(N) URINE : < 3 RBC/ HPF in centrifuged specimen

HEMATURIA

> 5 RBC/HPF x 3 consecutive Reports

OR

> 100 RBC/ HPF : single Report

* PAINFUL HEMATURIA : Nephrocalcinosis

Urine m/e: RBC ++

Ca oxalate stones → envelope shaped

STRUVITE/ STAGHORN/ TRIPLE PO4 : Mg NH4 PO4

UREASE (+) : coffin lid appearance, alkaline pH

* PROTEUS mirabilis
* PROVEIDENCIA

XRay KUB

→ Hexagonal crystal

CYSTINURIA

* IOC: Renal colic : NCCT Abdomen

CECT Abdo ⇒ C.I.N. Risk = POLYURIA, URAEMIA feature, S. creatinine ↑

Rx: IVF

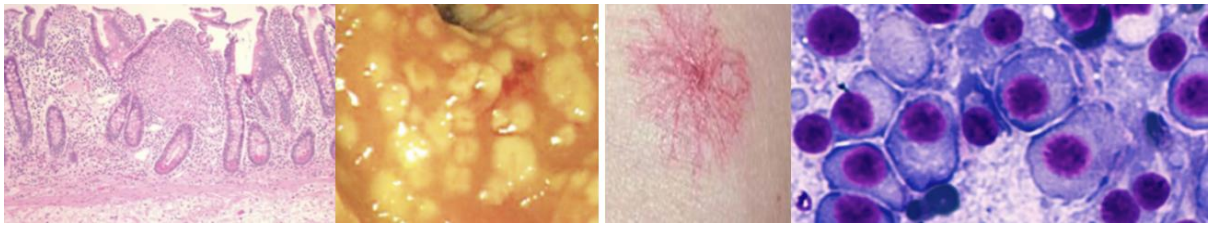
Renal stones

* ≤ 2 cm ⇒ E.S.W.L
  > 2 cm ⇒ PCNL

Additional Notes

Additional Notes

Additional Notes



PSEUDOMEMBRANOUS COLITIS

Cause:

Overgrowth of Cl. difficile

that produce toxins A (enterotoxin) & B (cytotoxin)

Triggers M/C

- Cephalosporins
- Clindamycin
- Fluoroquinolones
- Ampicillin / Amoxicillin
- Prolonged PPI use

Clinical features *

1. Profuse watery diarrhea
2. Abdominal pain, fever
3. Leukocytosis TLC ↑
4. Recent antibiotic exposure (oral or IV), often in a hospitalized or elderly patient.

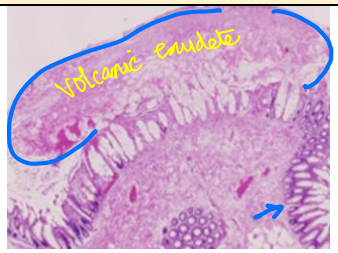
Screening glutamate dehydrogenase

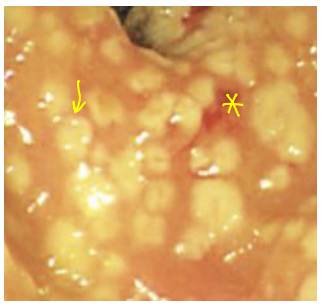
* 1. Stool GDH antigen
2. Stool EIA for toxin A and B

IOC

Stool PCR for Toxin A, Toxin B gene

Colonoscopy: Yellow–white raised plaques (pseudo-membranes) with patchy distribution over erythematous mucosa in colon





Colonoscopy

Rx: MACROLIDE

First episode: Fidaxomicin

Severe or relapsed PMC:

Vancomycin ORAL

Multiple recurrences: Faecal microbiota transplant

m/c: Trophozoites ± ingested RBC : bacilli + PMN

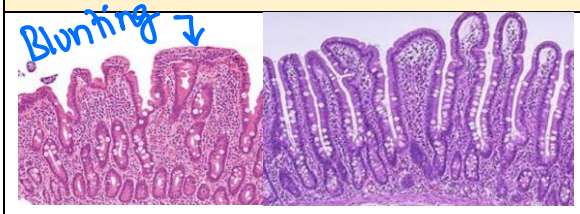
Shigella — E. Histolytica

blood in stool ⊕

Q: Antibiotic induced colitis ⇒ Klebsiella oxytoca

Post (AUGMENTIN) (blood in stool)

→ Microvilli # : surface area ↓ : OSMOTIC DIARRHEA

CELIAC SPRUE	Barley, Rye, oats
 Blunting ↓	BROW is CI Wheat
IOC- IgA anti-tTG antibody =	HLA DQ2 DQ8 : Why ?
* Anti endomysial antibody- **Highest specificity**	Rx ↓ Quinoa, Bajra, maize and rice with iron and Folic acid is given
If IgA deficient ↓ 1. IgG anti-tTG 2. Anti- Deamidated Gliadin Peptide	Follow up required for 1. T1 DM : Insulinopenia 2. DH * 3. EATL → lymphoma of gut death

duodenum Jejunum

dimorphic Anemia

ENTEROPATHY associated T-cell lymphoma

MARSH classification

gold std: Small intestinal Mucosal Bx

* BEFORE: Villous atrophy
  AFTER : Regeneration of villi
  exclusion of gluten

DERMATITIS HERPETIFORMIS

gluten allergy I

Teenager, PRURITIC PAPULES ± excoriation marks

WORK UP
- elbow
- knee

SKIN Bx → Light microscopy = Papillary Tip microabscess

IF → Focal IgA deposits at D-E-J

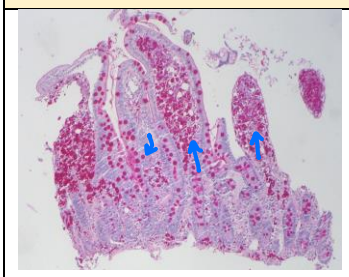
anti Epidermal Transglutaminase Alb

Rx ⇒ DAPSONE

IOC for malabsorption: 72-hour fecal fat estimation: > 7g fat (Sudan III stain)

fat malabs^N → BREATH TRIOLEIN TEST

Whipple disease



PAS+
- Hepatocytes = α_1AT ↓
- duodenal sample = Whipple
- BMA = lymphoblast ALL

Cause TROPHERYMI whipelli (bacteria)

1. Chronic diarrhea, steatorrhea, weight loss
2. Seronegative arthritis that precedes GI symptoms
3. Fever LG
4. Hyperpigmentation knuckles, IP joints

IOC: Duodenal biopsy

* -PAS-positive macrophages in lamina propria showing rod shaped bacilli

-PCR on blood sample

Rx:

1. Ceftriaxone iv 2 wks
2. TMP SMX : 6 – 12 mths

Complications

-CNS cognitive decline

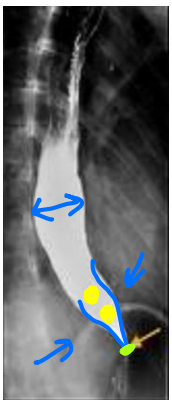
♥ -CVS: culture negative endocarditis (Aortic > mitral)

STERILE

CHAGAS: Mega ♡ (Dcm), Mega colon, Mega esophagus
T. CRUZI: Reduvid bug: ROMANA SIGN

DISEASES OF ESPOPHAGUS

Achalasia cardia



Ba swallow

1. Shows smooth tapering defect
2. Bird beak — Pencil Tip
3. Sigmoid esophagus

Young ♀ : Progressive
* dysphagia (liquids > solids) more
* Halitosis
* Regurgitation of food items
* R. pneumonitis episodes
* Chest pain ±

Pathogenesis — PERISTALSIS, LES Tone ↑

Degeneration of inhibitory neurons (NO & VIP–producing) in the myenteric (Auerbach) plexus of the esophagus

* **Most common cause?** AUTOIMMUNITY
* **UGIE shows** PUCKERING of lower esophagus
* **IOC**

High resolution manometry : LES Tone ⇑

Chicago classification

Type 1	Type 2	Type 3
Absent peristalsis Incomplete LES relaxation	-Absent peristalsis -Incomplete LES relaxation -Uniform pressurization of entire esophagus	Premature / spastic distal contractions

Type 2 Best response to pneumatic dilatation and

Type 3 worst prognosis

Surgery of choice ↓ TOC

1. Heller's myotomy: Longitudinal division of LES muscle fibers to relieve obstruction +
2. Partial fundoplication (Dor or Toupet): Added to prevent postoperative GERD

   Effective for all Chicago types, especially Type I & II

	Other procedures 3. PD 4. Botulinum toxin inj 5. CCB

* Pseudo achalasia → Carcinoma stomach
  ↓
  AUERBACH plexus #
  Achalasia

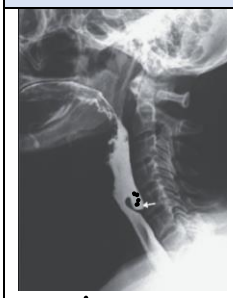
* Ba swallow — ZENKER DIVERTICULUM
  HIATUS HERNIA

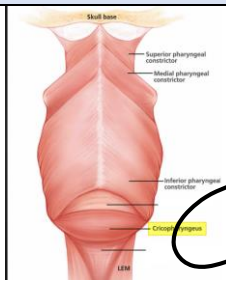
* CROHN's D — ileum #
  IOC : WCE > MR enterography (STRICTURES)
  DOC : Budesonide (ileal release), Prednisone
  Mesalamine
  INFLIXIMAB
  ✓ Hallmark → PERIANAL FISTULA

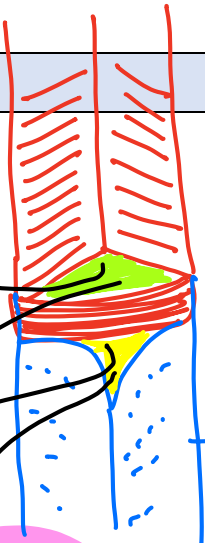
* UC — Rectum
  IOC : Colonoscopy
  DOC : MESALAMINE + Budesonide enema
  ✓ SEVERITY UC : TRUE LOVE & WITT'S CRITERIA

I.B.D = LA FEVER, bleeding, ESR ↑ CRP +
* STOOL/fecal: CALPROTECTIN (IBD vs IBS)

Zenker diverticulum







Inf. constrictor
KILLIAN Δ
Cricopharyngeus
LAIMER Δ
smooth muscle

* Ba swallow
outpouching +

70 - 80 yo: Non progressive dysphagia
Halitosis, Regurg^N, pneumonia ±
wt loss

Surgery

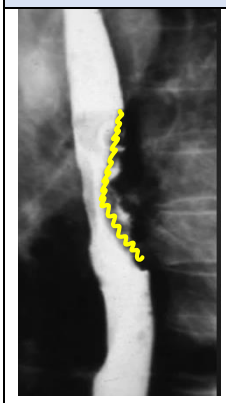
* 1st inv: UGIE

1. **Dohlman procedure (Endoscopic diverticulotomy)** : > 4 cm
2. **Z POEM**

ZENKER

* ZENKER DEGENERATION
TYPHOID (skeltal muscle)

Carcinoma esophagus : SCC : middle 1/



Rat Tail app

SEROSA absent in esophagus

SHOULDERING SIGN: irregular filling defect

50-70 yr: dysphagia progressive

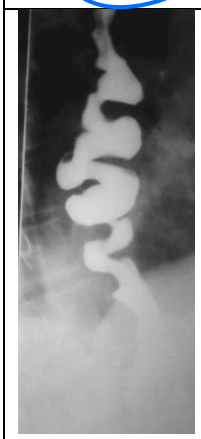
CACHEXIA (Solids > liquids)

Halitosis, Regurgn, R. pneumonie epis

WORK-UP: UGIE, HR manometry

↓ ba swallow, ba meal follow thro

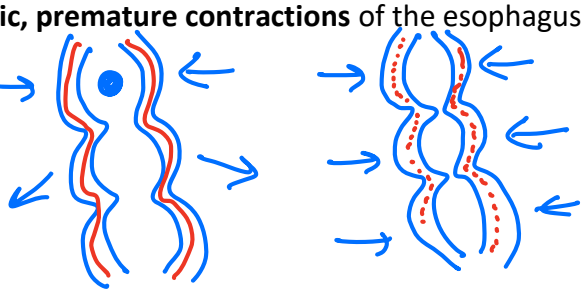
- UGIE + Bx PUNCH
- CT abdomen: LIVER
- Rx: surgical notes



CORK SCREW

DIFFUSE Esophageal spasm: idiopathic

Simultaneous, non-peristaltic, premature contractions of the esophagus with **normal LES relaxation**.



Jack hammer esophagus

Hypercontractile esophagus characterized by very high-amplitude, prolonged peristaltic contractions on HRM

* CHEST PAIN: Esophageal Angina

** young F: intermittent episodes of chest pain at Rest dysphagia, Regurgitation of food items

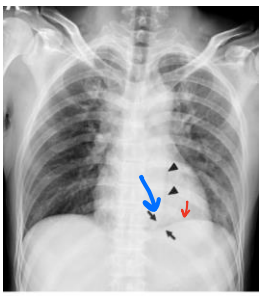
Inv: High Resolution O. manometry:

- LES Tone ↑ → achalasia (spastic)
- Non-peristaltic Contraction → DES

Rx: Anxiolytics, Tab Isosorbide mononitrate

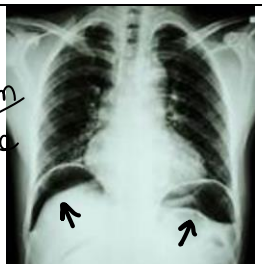
Amlodipine → Pedal edema, Reflex Tachycardia

Alcoholic develops multiple episodes of vomiting and retching followed by development of chest pain. CXR is shown First differential diagnosis



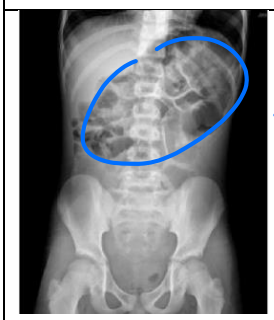
1. **Mallory Weiss** → c/o Hematemesis: submucosal Tear LES
   Cardia → LES: self-limiting
   Source: left gastric A
2. **Boerhaave syndrome** → MACULER TRIAD: Perforation of esophagus
   - Vomiting
   - Chest pain (chemical mediastinitis, SC emphysema)
   - Pneumo-mediastinum → XRC → Continous diaphragm sign

   IOC: CT chest + gastrografflin CONTRAST oral
   Rx: THORACOTOMY (Right sided)
3. **Bleeding esophageal varices** → TERLIPRESSIN



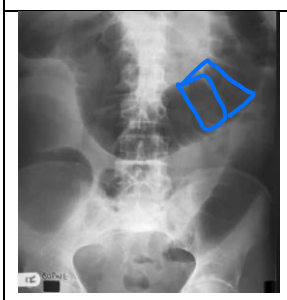
gas under diaphragm / mustache sign

Pneumoperitoneum
Why? – Hollow viscus PERFORATION
DU: D1: ANTERIOR
H.PYLORI
omentum
Rx: Exploratory lap + graham patch



*

20 yr ♀: colicky pain, bilious vomiting
XR Abdo: multiple dilated bowel loops
Δ: SBO
Why? – Adhesions, bands, Ascariasis



60 yr ♂: Abdo · distention
Obstipation: cant pass flatus
H/o constipation NR laxatives
XRay: Haustrations, dilated bowel loops
Δ: LBO
Why?: ? malignancy

neonate ⇒ day 2: bilious vomiting
XRay Abdo: double bubble sign: DA: Rx: D-D
XRay " : Triple bubble " : JA: Rx:

HEPATOLOGY

MC of acute viral hepatitis (adults)	HEV
Virus with highest chances of progression to chronicity	HCV
MC of chronic viral hepatitis (Total no of cases)	HBV
MC viral of Fulminant hepatitis	HDV + HBV (superinfection) ↳ 20% chances
MCC of Fulminant hepatitis in pregnancy *	HEV ↳ 30% chances
MCC of hepatocellular carcinoma	HepB > Hep C
DOC for Hepatitis B	TENOFOVIR, ENTECAVIR (HIV + HBV)
DOC for hepatitis C	SOFOSBUVIR + VELPATASVIR NS-B NS-A
DOC for hepatitis D	↳ α- INTERFERON : immunity booster
MCC of OLT →	MASH/ NAFLD > hep C Metabolic dysfunction associated steato Hepatitis

(orthoptic)

steatosis: TG ↑↑ in hepatocytes

* HBV = 90% → spontaneous Resolution
* HCV = 90% CONVERSION To ch. hepatitis

≥ 5% Hepatocytes steatosis: fatty liver
obesity, DM

Hepatitis B

→ **ss/ds DNA virus :**

ground glass Hepatocytes

MCC Tx route: SEXUAL

Antigens

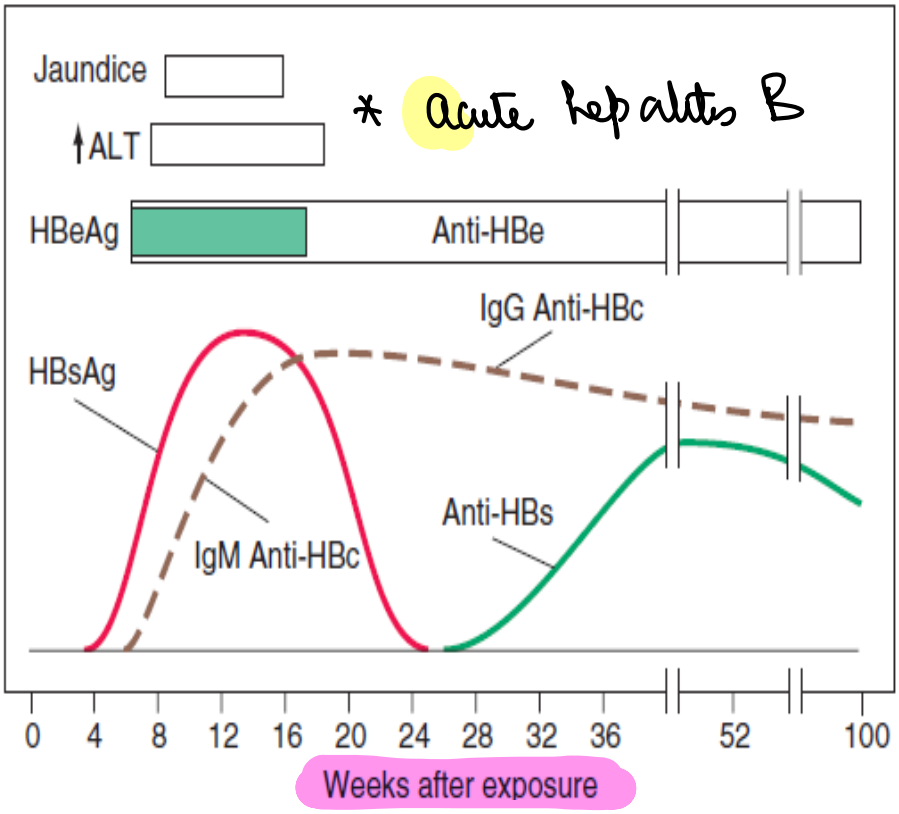
HBsAg	earliest SEROlogical indicator
HBcAg	NEVER TO APPEAR in blood
HBeAg	Replication/ INFECTIVITY
HBxAg	HCC : ⊖ CD 95 ⊖ apoptosis cytopathic effect
PCR → HBV DNA	≥ 2×10^4 IU DNA/ml + (SGPT x 2) Rx: TENOFOVIR

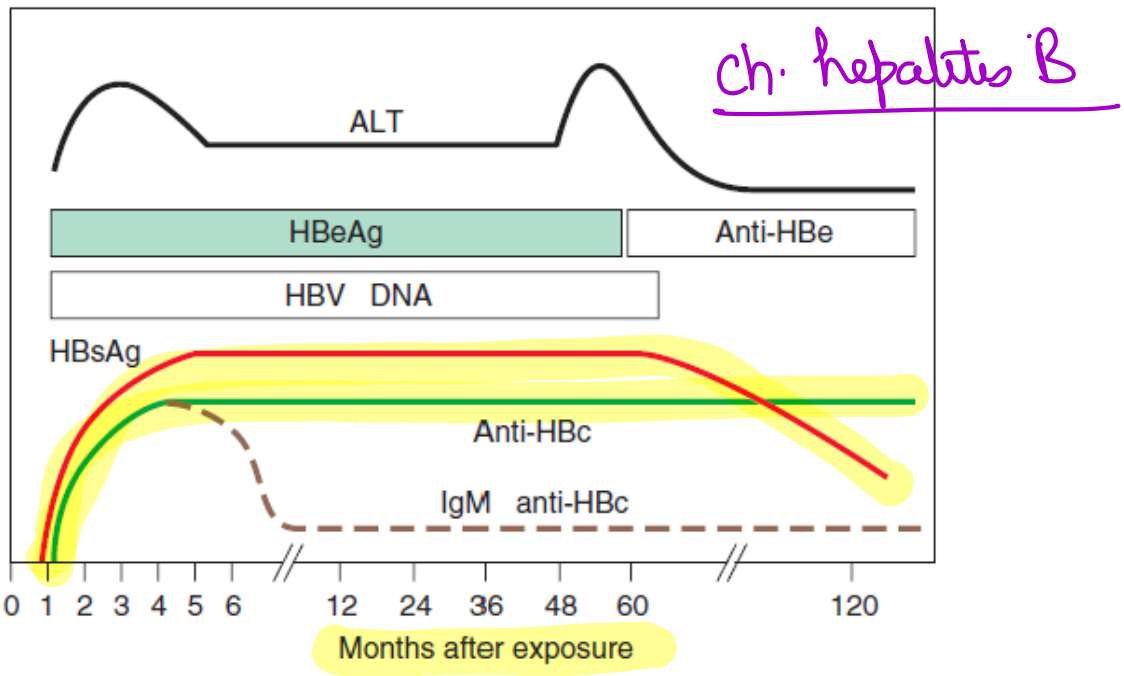
* TRANSFUSION associated Hepatitis: HBV

Antibodies

1.	Anti HBs	SERO CONVERSION
*2.	Anti HBc	IgM ⇒ acute hep B, ~~GAP PERIOD~~ IgG ⇒ ch. hep B, Remote infection
3.	Anti HBe	INFECTIVITY ↓

Serological interpretation





HBsAg	Anti HBs	Anti HBc	HBe Ag	
+	−	IgM	+	acute hepatitis B highly infectious
+	−	IgG	+	Chronic hepatitis B highly infectious
−	+	−	−	Vaccinated
−	−	IgM	−	gap period
−	−	IgG	−	Remote infection

→ Stellate cells: FIBROSIS ⊕

CIRRHOSIS

-MCC is NAFLD (>5% of hepatocytes showing steatosis) ✓

-MCC of need for OLT IS NAFLD

-Non-invasive imaging for NAFLD is **Fibro-scan** Transient ELASTOGRAPHY

-Drugs approved for NAFLD

1. *Resmetirom* ✓

MOA: Thyroid hormone receptor-β (THR-β) agonist : ↑ Hepatic fat metabolism and reduces liver fat

2. *Semaglutide (GLP-1 receptor agonist)*

Lanifibranor: Pan-PPAR agonist in phase III trials

Scores for severity of cirrhosis BILIRUBIN, INR, Asterixis : NH_3 ↑

Albumin
Ascites

*

*Child-Turcotte-Pugh Class obtained by adding score for each parameter (total points)
Class A = 5 to 6 points
✓ **Class B** = 7 to 9 points
Class C = 10 to 15 points

Value ≥ 8: Register for O.L.T

(B) 8

MELD Score	MELD 3.0
* C : S. CREATININE B : S. BILIRUBIN I : INR (Hepato-Renal syn) 6-40 = Range >17 : Register for OLT	* CBI : ✓ + * Sodium * albumin INR : PT ☺ aPTT ☹

Ascites

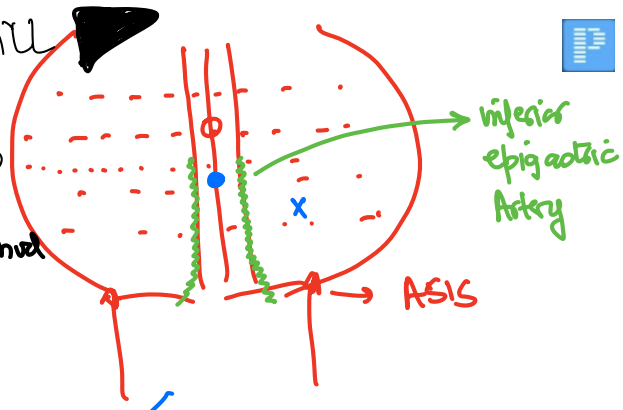
Serum albumin ascites gradient

SAAG > 1.1 g/dl		SAAG < 1.1 g/dl
Ascitic Fluid Protein < 2.5 g/dL	**Ascitic Fluid Protein > 2.5 g/dL**	T.P.N 1. TB 2. PERITONEAL carcinomatosis – Ca ovary – Ca stomach 3. PANCREATITIS 4. Nephrotic syndrome
Alcoholic liver disease Portal vein thrombosis FIBROSIS * Late Budd–Chiari syndrome	CHF Early Budd–Chiari syndrome Sinusoidal obstruction syndrome (veno-occlusive disease) Endemic Ascites	

* SAAG > 1.1, Ascitic protein: < 2.5g/dL: Late budd Chiari syn

Abd. PARACENTESIS

* FLUID THRILL
* SHIFTING dullness



Site of ascitic tap in refractory ascites 2-method

1. 2cm below umbilicus
2. 2-3 cm above medial to ASIS

Spontaneous bacterial peritonitis

Q. A 54-year-old male with CLD and ascites presents with massive ascites. While in hospital he develops fever, abdominal pain and worsening ascites associated with shortness of breath. Which of the following is correct about clinical diagnosis of SBP?

diagnostic paracentesis

a. PMN cells > 50 cells/cu.mm in ascitic fluid
b. PMN cells > 100 cells/cu.mm in ascitic fluid
c. PMN cells > 150 cells/cu.mm in ascitic fluid
d. PMN cells > 250 cells/cu.mm in ascitic fluid

E. coli
Trans-migration of bacteria via bowel wall

DOC for management of SBP = cefotaxime

Prevention of SBP = norfloxacin FQ

Hepatorenal syndrome	**Hepatopulmonary syndrome**
Occurs due to Severe splanchnic vasodilation causing effective arterial volume causing reflex renal vasoconstriction * PRE-RENAL AKI Presents as 1. Oliguria 2. AKI	Nitric oxide–mediated intrapulmonary vascular dilatation [A.myxoma, HPS] SOB: ↑ in sitting position Presents as: 1. Platypnea 2. Orthodeoxia SpO_2↓ : on position change
1. Terlipressin + albumin or 2. Midodrine + octreotide + Albumin 3. Definitive is OLT	Rx: O.L.T + I.P.P.V Coagulopathy * any 1 * encephalopathy

OLT
1. fulm. hepatitis
2. HRS
3. HPS
4. WILSON

✡ HVPG > 5mm Hg

PORTAL HYPERTENSION → Portal vein > 10 mm Hg

MC complication of CLD

↳ PORTAL HTN

Earliest and most reliable examination finding of portal hypertension

↳ Splenomegaly

Portal hypertension definition is HVPG > 5 **mm Hg**

HVPG > 12 **mm Hg increases risk of hematemesis due to esophageal varices** *

↳ BRIGHT Red vomitus

COFFEE-GROUND VOMITUS

Source of bleeding in esophageal varices

Portal side = left gastric vein

* Systemic vein = azygos vein

Best management for prevention of bleeding from esophageal varices

↳ E.V.L or Nadolol

DOC for prevention of bleeding from esophageal varices

↳ Nadolol or Propranolol

DOC of bleeding Ovances ⇒ OCTREOTIDE / TERLIPRESSIN

cold clammy extremities

Management of acute variceal bleeding with BP < 90/60 mm Hg

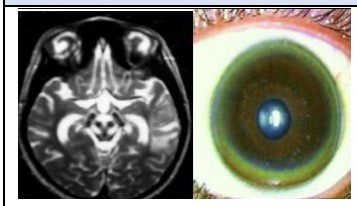
1. Wide bore cannula
2. Massive transfusion
   - 1:1:1 ⇒ 6 units PRBC : 6 units FFP : 6 units P.R.P
   - 1:1:0.25 ⇒ 〃 〃 : 1 unit SDP
   - > 5L of whole blood / 24 HOURS
   - > 2.5L 〃 〃 / 4 HOURS
   - (via inline warmer)
3. Permissive hypotension ~ TARGET BP = 90/60
4. Octreotide / Somatostatin — DOC
5. Endoscopic variceal ligation — TOC

bleeding
- 1st line : M.T
- DOC : OCTREOTIDE
- TOC : EVL
  - bleeding varices 12
  - Non bleeding varices 5

TRIAD of death
1. HYPOTHERMIA
2. COAGULOPATHY
3. M.ACIDOSIS

XLR MENKE: ATP 7A gene, ch X, Boy: MR + kinky hair

Wilson disease



Gene ATP 7B

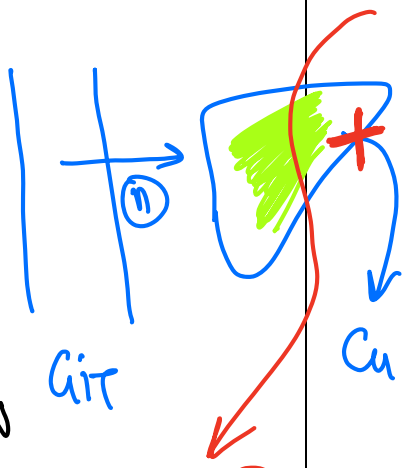
Chromosome 13

Inheritance AR

Hepatolenticular #

Defect

* DEFECTIVE Hepatobiliary xcretion of COPPER



C/F: Mnemonic- COPPER

1. **Chronic hepatitis** <10yr: SGPT ↑
2. **Ocular features** >10yr KF ring
Slit lamp: descemet membrane
3. **Psychiatric features** bizzare behaviour
4. **PD like features** lenticular N #
EPS dystonia, Rigidity, Bradykinesia TREMORS
5. **Renal tubular disorder** PCT #
amino aciduria, glucosuria renal RTA 2

Screening [S. CERULOPLASMIN ↓ + 24 hr urinary copper

IOC * LIVER Bx c estimation of Hepatic copper content | g of dry weight of liver

* DOC ↓
1st line drug
TRIENTENE

* CNS (+) = TETRATHIOMOLYBDATE
↳ MRI: GIANT face of Panda

* DOC for maintainence in wilson ⇒ zinc acetate

* OLT based NAZER INDEX

HBsAg ⊕ PATIENT

Additional Notes

Accidental needle stick injury : Recapping of needle

↓

chances = 30%

HCW

unvaccinated

Rx: HBIg I.M. < 24 HOURS

HCW partially vaccinated

↳ next best step: Anti HBs TITER

< 10 IU/mL	≥ 10 IU/mL
* Single dose of Hepatitis B vaccine	No need of further intervention

Subunit vaccine : 20 µg : antigen dose

primary course : 0, 1, 6 mths

Anti HBs < 10 IU/mL

Repeat course : 0, 1, 6 months

Anti HBs < : 10 IU/mL

Q. TRUE NON RESPONDER : Two courses given?

if occupational exposure : then give

HBIg IV x 2 dosages, 1 mth apart

Q/ if HBV + HDV Coinfection vs superinfection

⊕ IgM Anti HBc Ag

IVDU HBsAg + * IgM anti HBc + acute hep B April 2026	IVDU IgM anti HDV + acute hep D May 2026

= Coinfection

accidental needle stick injury

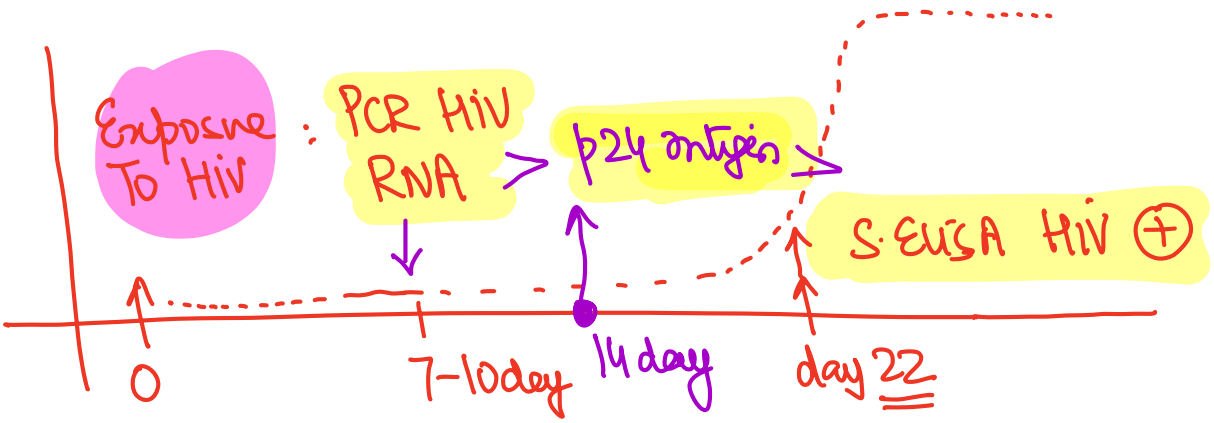
HIV ⊕ = chances = 0.3%

Rx = TLD Tenofovir + lamivudine + DOLUTREGAVIR

* START: < 4 HOURS
* Not effective : > 72 HOURS
* duration ⇒ 28 days

HIV = 0.3%
HCV = 3%
HBV = 30%

← accidental needle stick injury

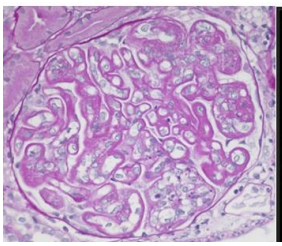
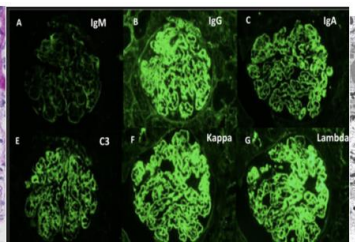


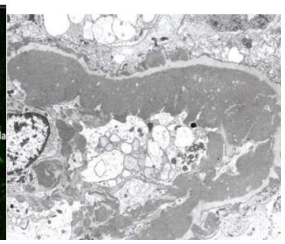
Additional Notes

Additional Notes

RHEUMATOLOGY

Systemic lupus erythematosus SLE



- Type 3 HSR
- Must have criteria for diagnosis is ANA
- MC body system involved is MUSCULO-SKELETAL involvement
- Type of arthritis seen is non erosive polyarticular involvement
- MC Type of anemia is NORMOCYTIC ANAEMIA : ACD
- MC type of anemia taken as diagnostic criteria is A.I.H.A
- Leading cause of death after decade Accelerated atherosclerosis : CV mortality ↑
- Leading cause of death in first decade of diagnosis is LUPUS NEPHRITIS

SLE = ♀ : ♂ = 6 : 1

Drug induced lupus erythematosus DLE

- ✓ 1:1 male ratio
- ✓ Renal involvement and CNS involvement is rare
- ✓ Causative drugs are

H — Hydralazine

I — INH

P — Procainamide

Methyldopa, minocycline and Quinidine