



Ascites:

pathogenesis, treatment, complications

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Illustrations: author`s archive and Google search



Ascites (definition):

Pathological accumulation of fluid within abdominal peritoneal cavity

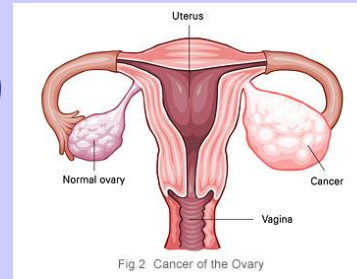
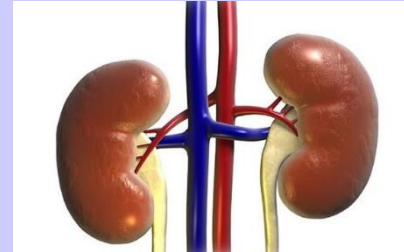
Causes?



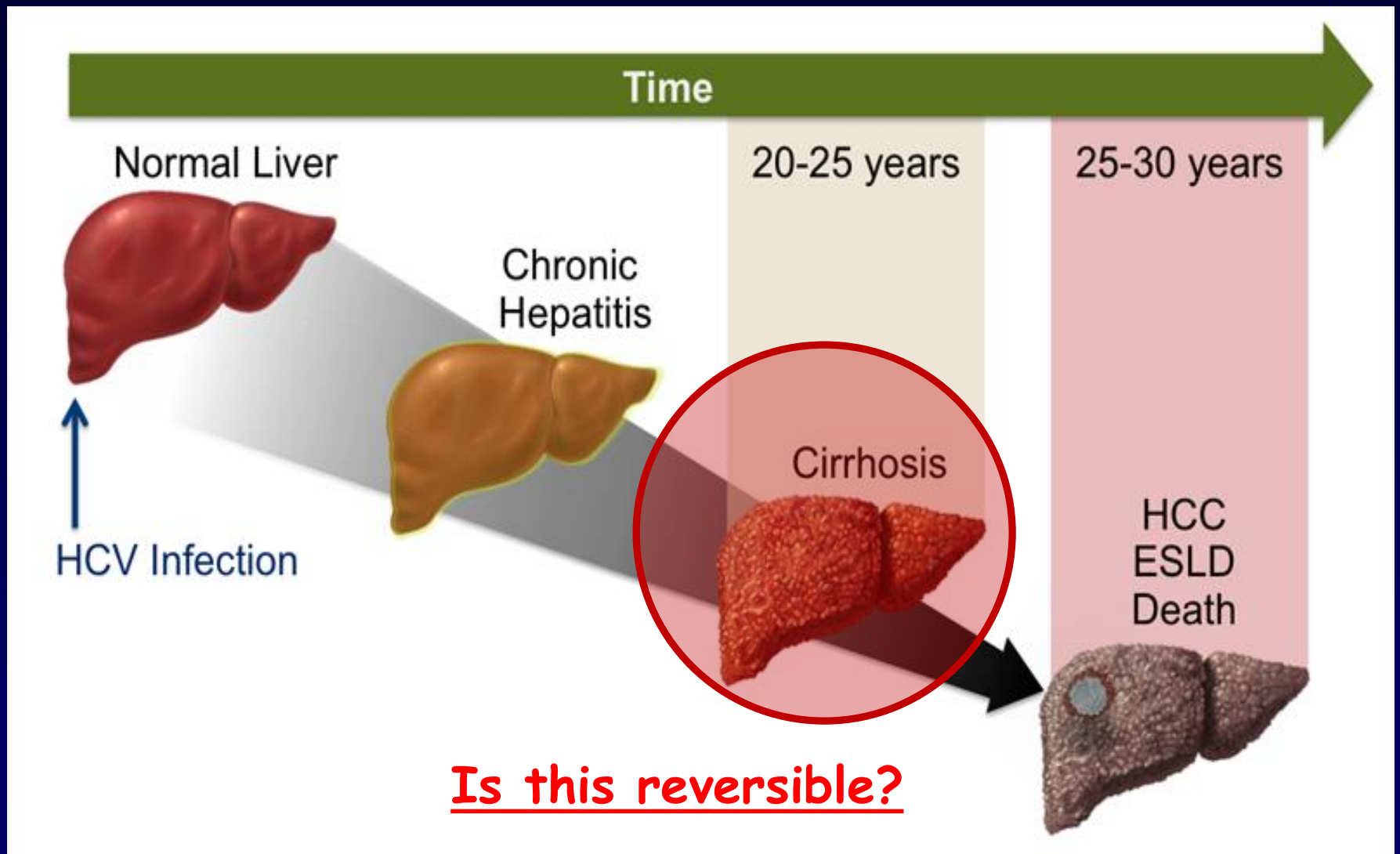
Ascites (causes):

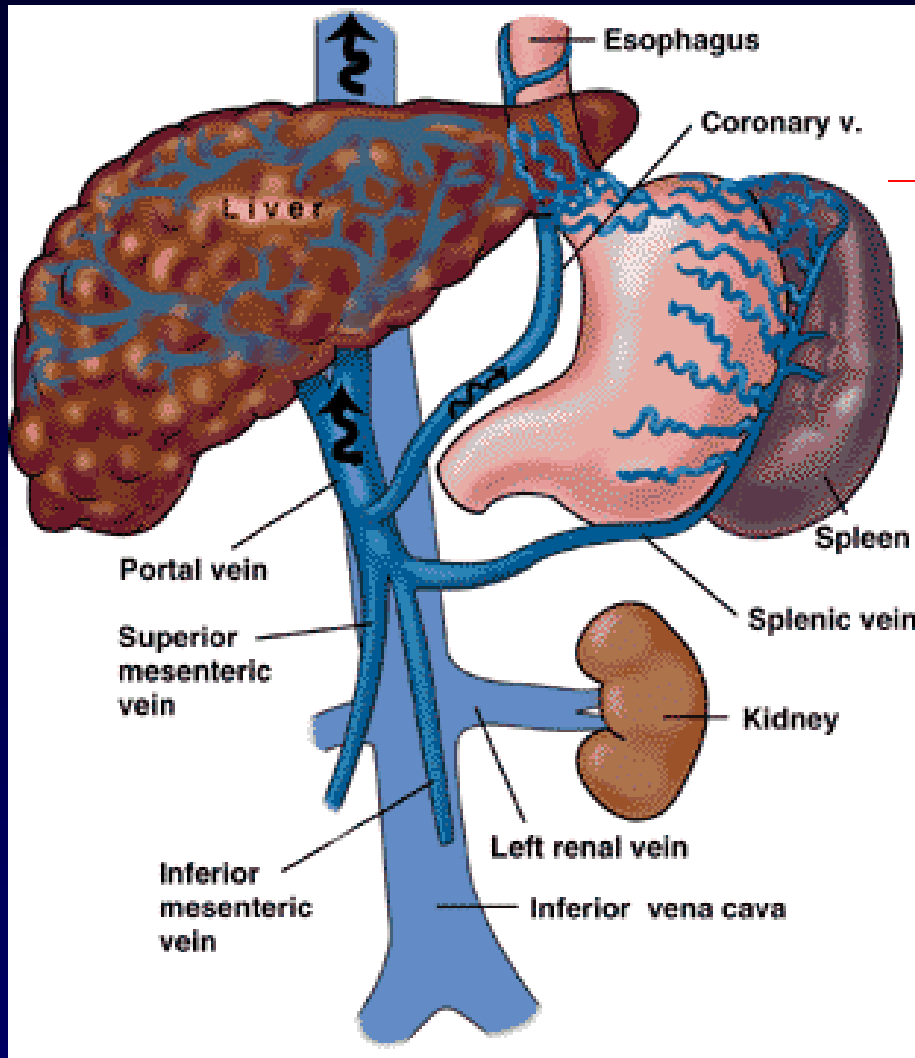


- Heart failure
- Nephrotic syndrome
- Tumours (e.g. ovarian)
- Pancreatitis
- Chronic liver failure



Fibrosis I ----- Fibrosis IV





Portal hypertension

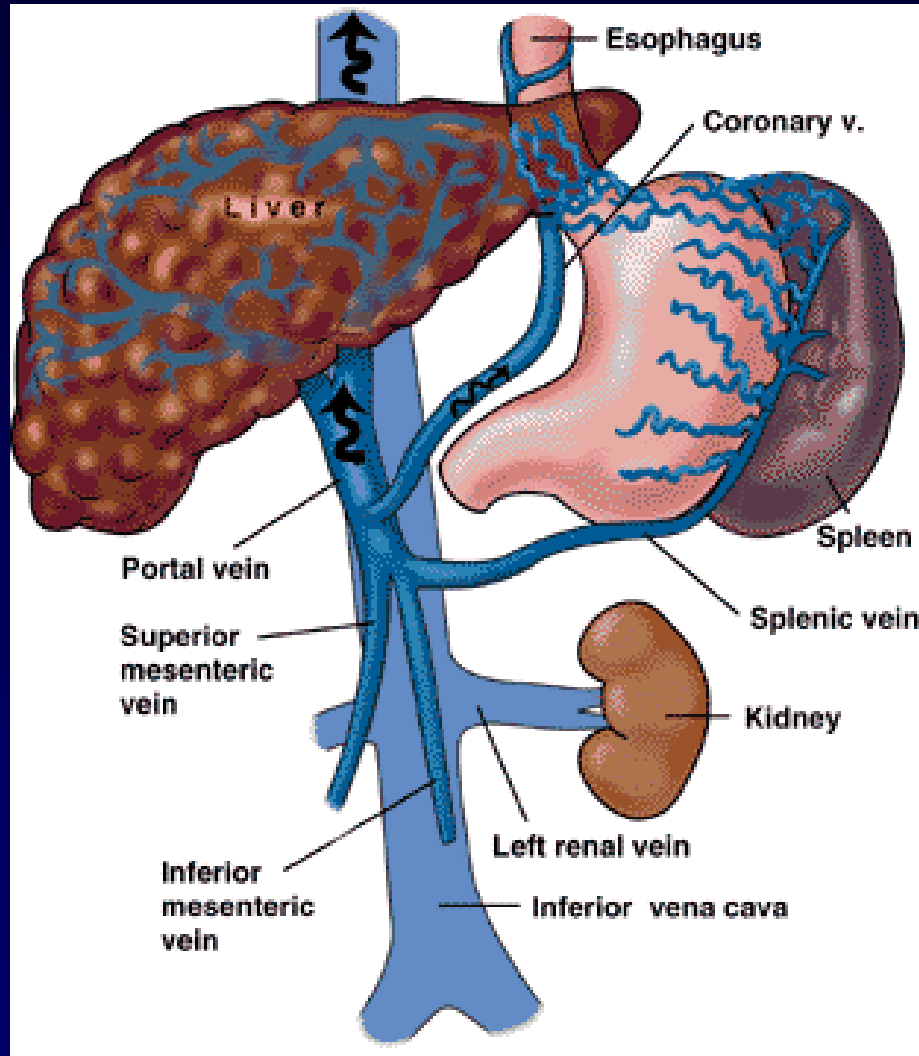
Increased intrahepatic pressure



Development of collaterals

The most common cause of a) death; b) Liver transplant referral

Ascites



- Increased hydrostatic pressure
- Decreased oncotic pressure

Ascites



- Symptom of:
 - decompensation of liver function
 - Portal vein thrombosis

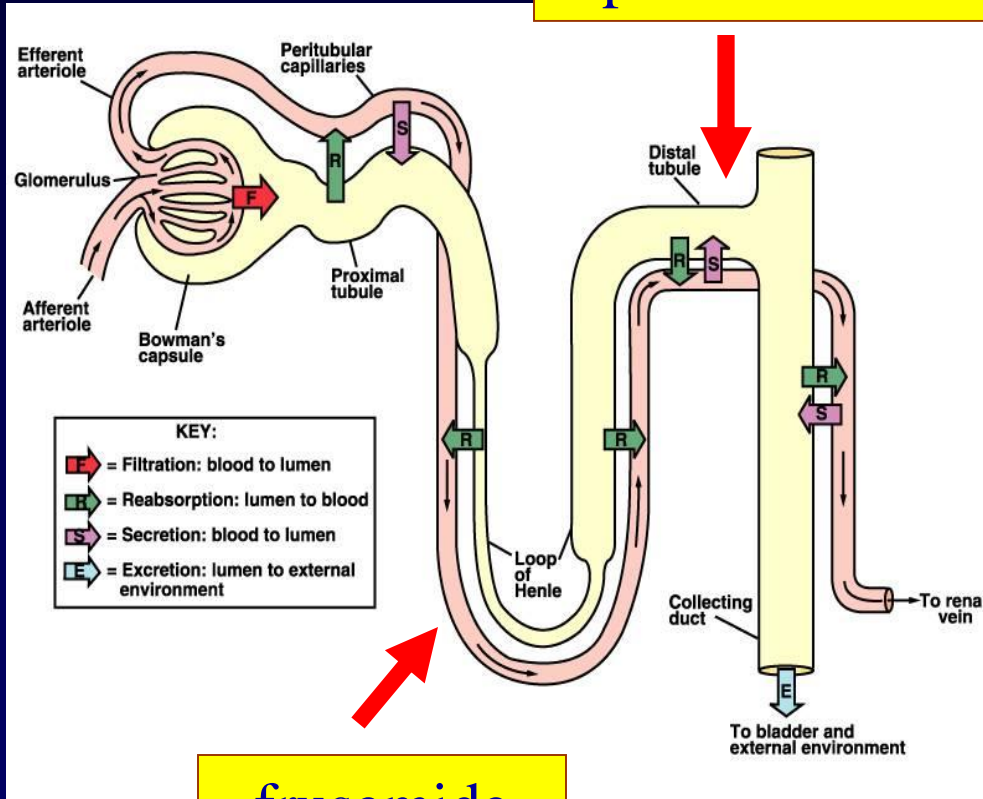
Ascites: treatment



- Bed rest?
- Low Na diet

Ascites: diuretics

spironolactone



frusemide

1. Spironolactone 50-200mg
2. + Frusemide 40-80mg
3. Max: spiro 400mg + frusemide 160mg
4. **Monitoring of response:**
 - Decrease of b.w. to:
 - 2kg/d (periph oedema)
 - 0.7kg/d (only ascites)

Spironolactone-antagonist of aldosterone receptor, distal tube

Frusemide- loop diuretic, inhibits uptake of Na

Ascites: paracentesis

1. !!! Careful with ↑ Creat
2. Up to 5 l. safe with colloids only
3. ↑ 5 l. albumin 100ml 20%/ 3l ascitic fluid
4. The quicker the better



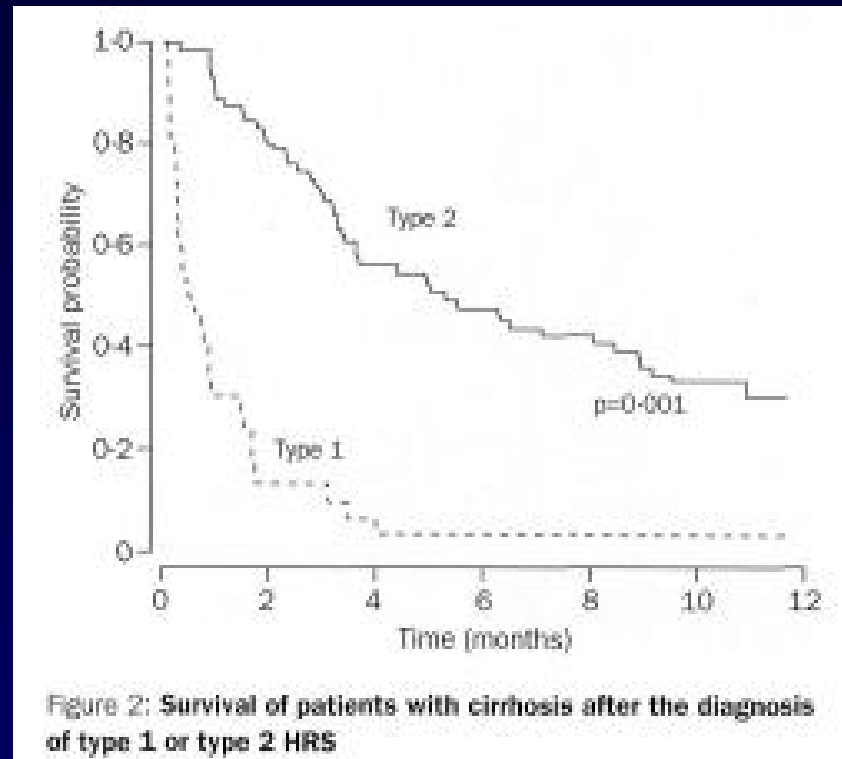
Ascites: most common mistakes

- Starting pharmacological therapy with frusemide
- Using a sharp needle for aspiration
- Procedure performed without colloid/albumen
- Drainage with permanent catheter

Ascites: indications for OLTx

- No response to maximal doses of diuretics
- Need for regular paracentesis

Ascites: complications: hepatorenal syndrome



2 months mortality - 80% – 90%

Gines et al. Lancet 2003

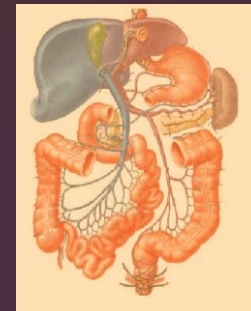
Zespół wątrobowo-nerkowy: patogeneza



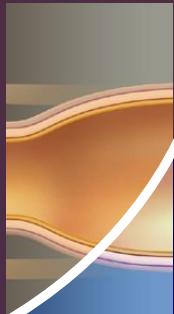
Vascular restriction
(impaired flow)



Vascular dilatation (
pressure drop)



↑ NO



HRS: patogenesis

Dilation of splanchnic circulation = pressure drop



Compensative constriction of kidney vessels (to maintain the flow)



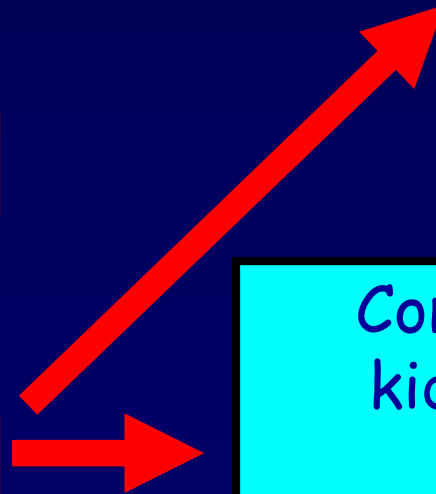
Kidney ischaemia



R-A-A stimulation

Reabsorption of Na
ASCITES

Constriction of kidney vessels
HRS



Hepatorenal syndrome

Simplified criteria:

- Chronic liver disease with ascites
- Creatinine **↑1.5mg/dl**
- No improvement after 2 days of diuretics withdrawal + albumin (! 1g/kg m.c.)
- Exclusion: shock, nephrotoxic drugs, glomerulonephritis

Hepatorenal syndrome

Helpful tests:

- Creatinin clearance < 40ml/min
- Diuresis ↓500ml/dz
- Na in urine ↓10mEq/l

Hepatorenal syndrome: risk factors

- Infection (esp. SBP)

Spontaneous bacterial peritonitis

- In patients with ascites
- Course:
 - asymptomatic (30%)
 - Temperature (80%)
 - Abdo pain - nonspecific(70%)
 - Deterioration of encephalopathy
 - diarrhoea



Spontaneous bacterial peritonitis

- Diagnostic tap + cultures
- Etiology: bacterial transfer
 - 75% Gram (-) E.coli
 - 25% Gram (+) Streptococcus sp.
- Treatment
 - Cephalosporin (cefotaksym) 3 x 2g iv (10dni)
 - Chinolon (Ciproflox) 2 x 200mg iv (10dni)
- Treatment, when?
 - WBC in ascitic fluid >500/ml - ALWAYS
 - WBC in ascitic fluid 250-500/ml - SYMPTOMATIC
 - WBC in ascitic fluid <250/ml - ONLY IF CULTURES ARE POSITIVE



Hepatorenal syndrome: risk factors

- Infection (SBP)
- Paracentesis not covered with colloid or albumin (15% of cases)
- Agressive forcing of diuresis
- Bleeds, hypovolaemia
- Risk of HRS in a subject with ascites 1 yr-18%; 5yrs-40%

Gines et al. 2003, O` Shea et al. 2013



Liver transplant - an ultimate treatment