Ascitic Fluid Analysis

Appearances

- **Straw**: serous effusion (clear = transudate; cloudy = exudates)
- **Bloody**: trauma, malignancy, haemorrhagic pancreatitis, perforated peptic ulcer
- **Turbid**: SBP, perforated viscus
- **Chylous (milky)**: malignancy, lymphoma, tuberculosis, parasitic

Serum-ascites albumin gradient (SAAG)

The SAAG indirectly measures portal pressure and can be used to determine if ascites is due to portal hypertension:

SAAG = serum albumin – ascitic fluid albumin

NOTE: ensure all values are in *g/L*

High SAAG **>11g/L** causes = PORTAL HYPERTENSION

- Portal hypertension causes
  - Pre-hepatic: portal vein thrombosis
  - Hepatic: cirrhosis, chronic hepatitis
  - Post-hepatic: right heart failure, constrictive pericarditis, Budd-Chiari syndrome

Low SAAG **<11g/L** causes = OTHER

- Other causes
  - Peritoneal disease: intra-abdominal malignancy, peritoneal dialysis
  - Hypoalbuminaemia: nephrotic syndrome, malnutrition, protein-loosing enteropathy
  - Other: pancreatitis/pancreatic pseudocyst, haemoperitoneum, myxoedema, chylous ascites

Cell count and differential

Neutrophils >0.25x10^9/L = spontaneous bacterial peritonitis

(other units: >250x10^6/L; >250cells/cumm ; >250cells/µL)

Other tests

- **Cells**
  - *MC&S*: identify infective agents
  - *Cytology*: identify malignant causes
- **Tests for transudate vs exudates** – largely replaced by SAAG
  - *Protein* (<25g/L = transudate; >25g/L = exudate)
  - *LDH* (<225U/L = transudate; >225U/L = exudate)
- **Other tests to consider**
  - *Amylase (normally similar to serum levels)*: raised in pancreatitis/pancreatic pseudocyst/pancreatic trauma
  - *Glucose (normally similar to serum levels)*: decreased in tuberculosis and malignancy