**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:

\[
\text{SAAG} = \text{serum albumin} - \text{ascitic fluid albumin}
\]

**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, TB
  - Hypoalbuminaemia: nephrotic syndrome, malnutrition, protein-losing 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 causes
    - **Cell count**
      - Neutrophils (normally <0.25x10^9/L): raised in spontaneous bacterial peritonitis
      - Lymphocytes (normally <0.5x10^9/L): raised in inflammation, TB, malignancy
  - **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 TB and malignancy

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