

## The Investigation of Peritoneal (Ascitic) Effusions

Please state the fluid type clearly on the request form under 'specimen type'.

### 1. What are the sampling requirements?

- Microbiology – culture bottles for bacterial culture and one universal for gram staining and tuberculosis culture.
- Biochemistry – peritoneal (ascitic) fluid albumin in plain container; serum albumin in yellow bottle; glucose in fluoride oxalate bottles.
- Cytology – one universal for differential and cell count.

### 2. What is the appearance of the effusion and what does it signify?

- Ascites that is due to the commonest cause cirrhosis is usually clear, straw coloured.
- Homogeneously bloody sample: usually due to a traumatic tap but may also be indicative of malignancy, pancreatitis, infection or abdominal trauma. Samples that show haemolysis post-centrifugation will not be analysed for Biochemistry tests.
- Turbid/milky/cloudy: mainly due to malignancy.

### 3. What is the cause of a peritoneal (ascitic) effusion?

- Total Protein and LDH are NOT recommended in the evaluation of peritoneal (ascitic) effusions.
- The Transudate/exudates concept does NOT apply to peritoneal (ascitic) effusions.
- Request serum albumin and peritoneal (ascitic) fluid albumin and send appropriate samples.
- Determine serum-ascites albumin gradient (SAAG) in all peritoneal (ascitic) fluids.
- SAAG = serum albumin – ascites albumin.

SAAG	Pathophysiology	Causes
>11 g/L	Intrahepatic venous compression	Malignancy
	Portal hypertension	Cirrhosis, cardiac failure
≤11 g/L	Increased capillary permeability	Malignancy
	Mechanism unclear	Tuberculosis, pancreatitis

**Table.** Differential diagnosis of peritoneal (ascitic) effusions.

### 4. Is infection a cause of an effusion?

- Microbiology tests required - gram staining & culture.
- A low ascitic fluid glucose may be indicative of tuberculous ascites but is of limited diagnostic utility.

### 5. Is malignancy a cause of an effusion?

- Tumour markers are **not** recommended in the investigation of peritoneal (ascitic) effusions.
- Suggest cytology for cell count and differential.

### 6. Is pancreatitis a cause?

- Amylase has been shown not to be useful in the investigation of peritoneal (ascitic) effusions.

### 7. Why does the effusion appear milky or turbid?

- Chylous peritoneal effusions are rare and are mainly due to malignancy. Triglyceride concentrations rarely clinically useful.