Ascites - Cirrhosis - Full Clinical Guideline

Reference no.: CG-GASTRO/2015/203

Approximately 75% of patients with ascites will have cirrhosis. Mortality in patients with ascites and cirrhosis is 40% at 1 year and referral for liver transplant assessment should be considered if appropriate.

Diagnosis
Diagnostic paracentesis (tap) with a 21G (Green) needle should be performed in all patients with ascites.

See training video on obtaining a sample of ascites for diagnostic purposes

Diagnostic paracentesis is not contraindicated in the presence of a coagulopathy, but pooled platelets should be administered if platelet count is < 40,000.
Ideally 20mls should be collected and 10mls inoculated into blood culture bottles and the remainder divided between 2 or 3 universal containers. Fluid should be sent for:

Biochemistry - Albumin, Protein (if appears milky – chylous, then send for triglycerides)
Microbiology - neutrophil count and microscopy/ culture
Other tests e.g Amylase, Cytology should be done if clinical suspicion dictates

The serum-ascitic albumin gradient (SAAG) should be calculated - a value ≥ 11g/l is ascribed to portal hypertension with 97% accuracy

Abdominal USS with Doppler of portal vein is required to exclude a portal vein thrombosis or other precipitant of ascites.

An ascitic neutrophil (polymorph) count of ≥ 250 cells/ mm^3 indicates Spontaneous Bacterial Peritonitis (see guidance on management of SBP)

Management

- **Review medication –** Stop NSAIDs, ACE inhibitors and Angiotensin receptor blockers.

- **Sodium restriction** (80-120mmol/ day) - a negative sodium balance can be achieved in ≈ 10-20% of cirrhotic patients by dietary restriction. Adopting a no added salt diet and avoidance of pre-prepared foodstuffs can achieve the level of sodium restriction required. The hospital menu already meets the criteria for 80-100mmol/day providing the patient does not add salt.

  There is no evidence for fluid restriction except when ascites is associated with hypervolaemic hyponatraemia in which there is retention of free water

- **Diuretics** – A few patients with small volume ascites can be managed with Spironolactone (aldosterone antagonist) monotherapy. It has a slow onset of action and is usually initiated at 100mg daily with stepwise increases every 5-7 days. The majority of patients will require combination therapy with furosemide at a 100mg/ 40mg ratio and maximum doses of 400mg/160mg. Amiloride (5-10mg od) is not an aldosterone antagonist and should be reserved for patients who cannot take spironolactone because of side effects (not if hyperkalaemia).
  The dose of diuretics should be adjusted to achieve a rate of weight loss of ≤ 0.5kg/day (or ≤ 1kg/day if ascites and peripheral oedema).

As a significant proportion of patients develop abnormalities with serum sodium and creatinine within the first weeks of diuretic treatment. Close monitoring of UEs is necessary. All diuretics should be stopped if sodium < 125mmol/l. Stop Furosemide if potassium < 3.0 mmol/l and Spironolactone if > 6.0 mmol/l

Remember that many patients with cirrhosis have a low baseline creatinine and a creatinine within the normal laboratory range may still represent a significant deterioration in renal function - always compare with previous values.

- **Large volume paracentesis (LVP)** - (see separate guidance on insertion of drains)

Where patients are requiring repeated LVP they should be attending the planned investigation unit (PIU) - W202. Patients are able to contact PIU directly when in need of drainage

Refractory ascites

This refers to ascites that cannot be mobilised or early recurrence after LVP prevented by medical treatment.
Consider stopping Beta-blockers as there is some evidence of an association with increased mortality in patients with refractory ascites.
Consider Midodrine 7.5mg tds, particularly if the patient has low blood pressure (systolic BP < 90 or MAP < 65mmHg – MAP = [(2 x diastolic BP) + systolic BP]/ 3. Midodrine increases urine volumes, Na excretion, MAP and survival. It can in some cases convert refractory ascites to diuretic sensitive ascites.
Diuretics should be discontinued if there are diuretic induced complications or if the urine sodium on diuretic treatment is < 30mmol/day
Patients requiring repeated LVP in whom recovery of synthetic liver function is not expected should be considered for transplantation or TIPSS (see guidance on assessment for TIPSS).

Tunnelled abdominal drains **("Rocket" Drains)** are a palliative option for patients with refractory ascites. It enables the patient to remain in their own home without the need to attend hospital for repeated large volume paracentesis (LVP). The district nurse visits the patient 2-3 times p/week and attaches a drainage bag to drain two litres of ascites. The procedure is performed in fluoroscopy under local anaesthetic by a Radiologist. The most significant risk is that of infection and the patients suitability needs to be assessed accordingly and consent obtained. Advanced referral to the Liver Nurse Specialist is important as arrangements need to be made in the community for subsequent product supplies and drainage by the district nurse (see Appendix 4 – Specialist nurse letter to GP re rocket drain).

Hydrothorax

Usually unilateral and right sided. Occurs due to a small diaphragmatic defect. If the defect is large enough then fluid will be drawn into the thorax with each breath and there will be little in the abdomen. Fluid analysis can differ, in that the pleural fluid protein may be higher due to differences in hydrostatic forces.

Treatment is as for ascites, with insertion of a chest drain reserved for cases where SOBOE requires intervention.

Further reading

1. EASL clinical practice guidelines on management of ascites, spontaneous bacterial peritonitis and hepatorenal syndrome. Journal of Hepatology 2010; 53: 397-417
2. AASLD practice guideline: Management of adult patients with ascites due to cirrhosis. Hepatology April 2013

Documentation Controls

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Approved By:	Hepatology – November 2018 Medical Division – 15/11/18
Review Date:	December 2021
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