CONTROLLED DOCUMENT

University Hospitals Birmingham NHS
NHS Foundation Trust

Renal Guidelines in Cirrhosis

CATEGORY:	Clinical Guidelines
CLASSIFICATION:	Clinical
Controlled Document Number:	CG095
Version Number:	1
Controlled Document Sponsor:	Clinical Guidelines Group
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Approved By:	Clinical Guidelines Group
On:	June 2014
Review Date:	June 2016

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IMPORTANT NOTE:

THIS DOCUMENT SHOULD BE USED TO GUIDE PATIENT CARE AND SHOULD ONLY BE USED IN THE CORRECT CLINICAL CONTEXT. ALWAYS CONFIRM MEDICATION DOSES WITH THE BNF AND WHEN UNCERTAIN DISCUSS WITH THE LIVER UNIT CONSULTANTS.

Prevention

1. Albumin in patients with spontaneous bacterial peritonitis (SBP)

Patients with confirmed SBP should receive in conjunction with their antibiotics 1.5g/kg of albumin on day 1 and 1g/kg of albumin on day 3. This has been shown to improve 3 month mortality.
Sort et al NEJM 1999 Aug 5;341(6):403-9

2. Pentoxyfylline in Alcoholic Hepatitis

Patients with a Glasgow Alcoholic Hepatitis score greater than 9 of a Madrey discriminant greater than or equal to 32 should receive pentoxyfylline 400mg OD. This improves mortality by decreasing hepatorenal syndrome (HRS)
Akriviadis et al Gastro 2000 Dec;119(6):1637-48

3. Primary prophylaxis of spontaneous bacterial peritonitis

Patients with ascites with a protein value of less than 15g/l or raised Cre 115 umol/l or Na <130 mEq/L should receive quinolone prophylaxis against SBP. This reduced rates of HRS and improved 1 year mortality.
Fernandez et al Gastro 2007 Sep;133(3):818-24

4. Prevention of contrast induced nephropathy

Although cirrhosis has not been reported as an important risk factor for contrast-induced nephropathy, patients who undergo radiologic studies that require contrast medium should be treated with standard prophylactic measures such as saline hydration, and renal function should be monitored after the procedure.

Evaluation

- Evaluate fluid status of patient, be aware that patients can be oedematous and have ascites but be intravascularly under filled. Blood pressure response to fluid challenge can be useful.
- Consider a urinary catheter to monitor urine output
- Stop nephrotoxic drugs e.g NSAIDs, diuretics, etc
- Screen for sepsis (Blood cultures, MSU, stool culture, CXR, ascitic tap)
- Send urinary sodium (low in HRS and high in ATN)
- Evaluate patient for GI haemorrhage

Differential diagnosis

- Hepatorenal syndrome
- Hypovolaemia induced renal disease (GI haemorrhage, excess diuretics, diarrhoea secondary to lactulose or GI infection)
- Drug induced (NSAID, diuretic, aminoglycoside)
- Parenchymal (membranoproliferative glomerulonephritis in hepatitis C, autoimmune hepatitis/PBC and IgA nephropathy)

Hepatorenal syndrome

Definition

Usually occurs in patients with advanced liver disease and portal hypertension however can occur in alcoholic hepatitis. Type 1 HRS is defined as ≥100% increase in serum creatinine reaching a value greater than 221 µmol/L in less than 2 weeks. Patients who do not meet these criteria have Type 2 HRS,
which is characterised by a moderate and steady decrease in renal function.

Diagnosis

Creatinine >133umol/l which is not reduced by administration of albumin and after a minimum if 2 days of diuretics, Along with the absence of nephrotoxic drugs, shock and findings suggestive of parenchymal renal disease

Treatment

- Evaluate fluid status of patient, be aware that patients can be oedematous and have ascites but be intravascularly under filled. Blood pressure response to fluid challenge can be useful.
- Consider a urinary catheter to monitor urine output
- Stop nephrotoxic drugs e.g NSAIDs, diuretics, etc
- Screen for sepsis (Blood cultures, MSU, stool culture, CXR, ascitic tap)
- Send urinary sodium (low in HRS and high in ATN)
- Evaluate patient for GI haemorrhage

Once the patient is in fluid balance by using albumin 4.5% or 20% commence terlipressin 1mg TDS. This is contraindicated in patients with peripheral vascular disease and ischaemic heart disease. This can be increased to 2mg QDS depending on clinical response. Monitor for side effects i.e. gut, cardiac and limb ischemia.

Renal replacement therapy is appropriate in a select group of patients. Patients with HRS do not tolerate haemodialysis so continuous renal replacement therapy is the treatment of choice. It may be required in

patients with hyperkalaemia or severe fluid overload