Response to the NCEPOD Report '*Measuring the Units*'

A Regional Audit of the Management of Patients with Decompensated Liver Disease

The Newcastle upon Tyne Hospitals NHS Foundation Trust

On behalf of the North East and North Cumbria Clinical Hepatology Network

Jessica Dyson, Mark Hudson, Stuart McPherson Liver Unit, Freeman Hospital, Newcastle upon Tyne

INTRODUCTION

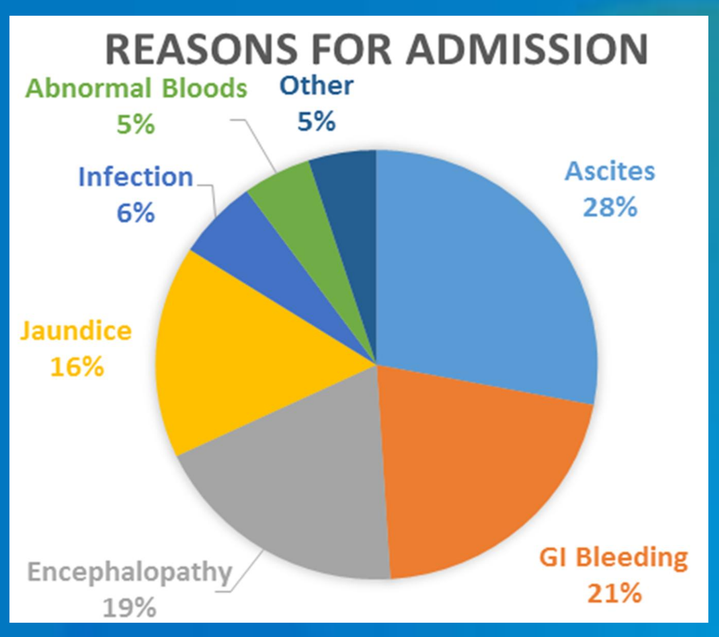
Deaths from chronic liver disease are still increasing unlike other major diseases.[1] Alcohol-related liver disease (ARLD) is one of the primary causes. The average age of death is 59 years and falling.[2] '*Measuring the Units*' found that hospitals are missing opportunities to save the lives of people with ARLD by failing to provide early intervention and specialist consultant input.[3]

AIMS and METHODS

This region-wide audit aimed to identify aspects of care that can be improved in the management of patients with decompensated liver disease in the first 24 hours after admission to hospital. An audit proforma was designed based on the key management points and standards identified in the NCEPOD report. All Trusts in the Northern Deanery collected data retrospectively on consecutive admissions with decompensated liver disease over a 3-month period (Sept to Dec 2013). There were no exclusion criteria.

RESULTS

- 139 patients were included in the study; 69% male
- Median age 54 years (range 26 – 86 years)
- ARLD was the cause of liver disease in 88%
- Median MELD score was 19 (range 6 – 39)
- **88% had Child-Pugh Grade B or C disease**
- **9% mortality rate during the admission**
- Average length of stay was 15 days



ASCITES

- Of 82 patients with clinical ascites;
  - 62% had diagnostic tap within 24 hours
  - 21% waited >24 hours
  - 17% did not have diagnostic tap
- 18% had spontaneous bacterial peritonitis (SBP)
  - 92% received albumin appropriately
  - 83% were given antibiotics according to local Trust protocol

ALCOHOL HISTORY

- Current alcohol consumption was documented in 81%
  - Patients were started on pabrinex and CIWA appropriately

RENAL FUNCTION

- 26% had renal impairment
  - 28% did not have their nephrotoxins stopped
- 9% had severe hyponatraemia (sodium <125mmol/L)
  - 42% did not have diuretics stopped

UGI BLEEDING

- 19% had variceal bleeding
  - 19% did not receive terlipressin
  - 30% did not receive vitamin K
  - Only 67% underwent endoscopy within 12 hours

HEPATIC ENCEPHALOPATHY

- 32% were encephalopathic
  - Lactulose commenced in 98%

CONSULTANT REVIEW

- 17% were not seen by any consultant within 12 hours
- 39% not seen by gastro/hepatology consultant in 24 hours

CONCLUSIONS

- Patients with decompensated liver disease are high risk for morbidity and mortality with a 9% in-patient mortality rate and advanced stage of liver disease (88% Child-Pugh B or C)
- There are clear deficiencies in their acute management across the Northern region in keeping with the findings of the NCEPOD report.

Areas of good practice:

- Majority of high risk patients are given thiamine and started on alcohol withdrawal regimens appropriately
- Lactulose was commenced appropriately in patients with encephalopathy.

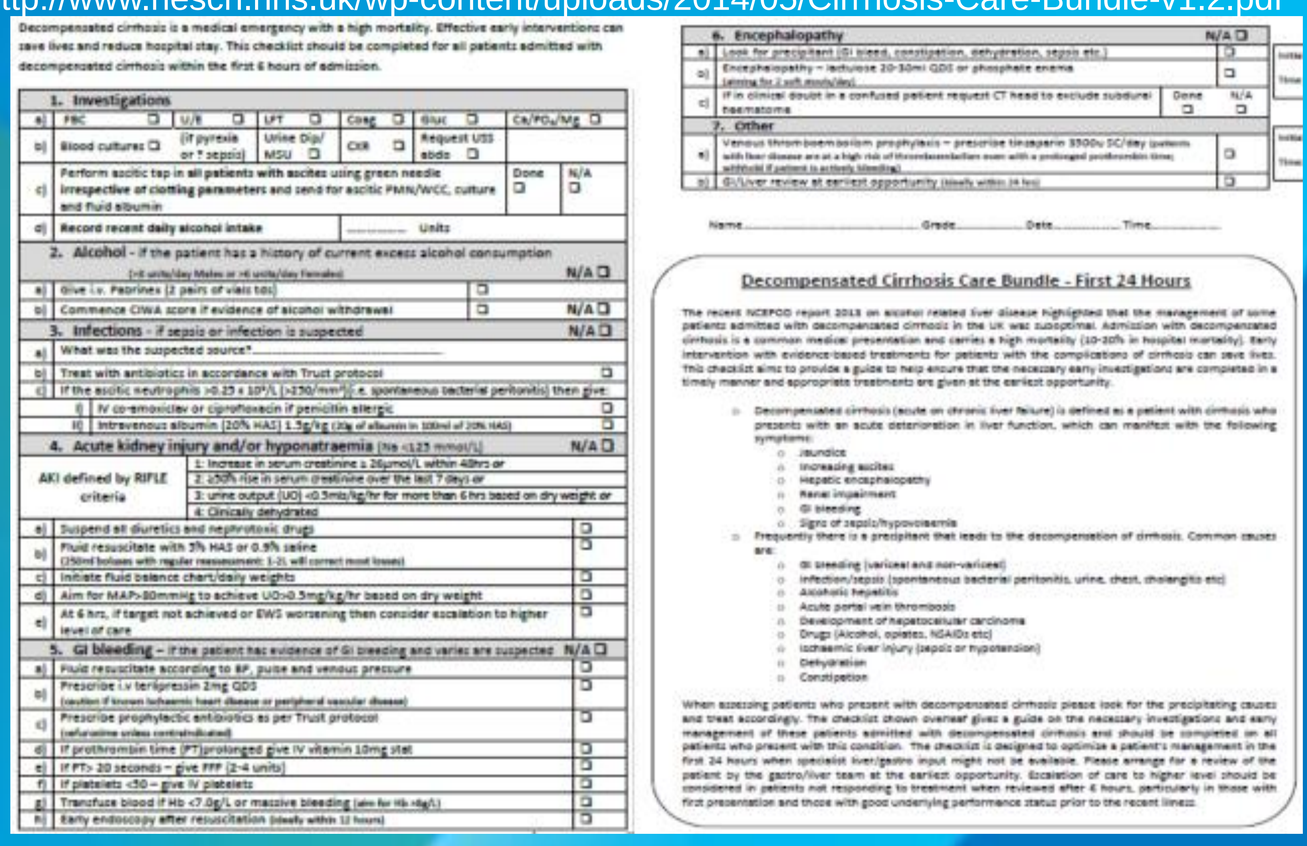
Areas for improvement:

- The exclusion of SBP is a clear area for improvement with 17% of patients not having an ascitic tap at all (higher than 10% reported by NCEPOD)
- Clinicians need to respond appropriately to renal impairment and hyponatraemia which herald a poor prognosis in this group
- Patients are not being reviewed in a timely manner with 17% not being seen by a consultant within 12 hours (vs 36% in NCEPOD)
- We must improve the documentation of alcohol history
- Almost 1 in 5 patients with variceal bleeding are not receiving terlipressin

FURTHER WORK

Since this audit, a **care bundle** has been designed/implemented in the Northern region (BSG/BASL endorsed) to optimise and standardise care.

URL:
http://www.nescn.nhs.uk/wp-content/uploads/2014/05/Cirrhosis-Care-Bundle-v1.2.pdf


Decompensated cirrhosis is a medical emergency with a high mortality. Effective early interventions can save lives and reduce hospital stay. This checklist should be completed for all patients admitted with decompensated cirrhosis within the first 6 hours of admission.

1. Investigations
a) FBC ☐ U/E ☐ LFT ☐ Coag ☐ Gluc ☐ Ca/PO4/Mg ☐
b) Blood cultures ☐ (if pyrexia or ↑ sepsis) Urine Dip/MSU ☐ CXR ☐ Request USS abdo ☐
c) Perform ascitic tap in all patients with ascites using green needle irrespective of clotting parameters and send for ascitic PMN/WCC, culture and fluid albumin — Done ☐ N/A ☐
d) Record recent daily alcohol intake ..... Units

2. Alcohol - if the patient has a history of current excess alcohol consumption ([>8 units/day Males or >6 units/day Females]) N/A ☐
a) Give i.v. Pabrinex (2 pairs of vials tds) ☐
b) Commence CIWA score if evidence of alcohol withdrawal ☐ N/A ☐

3. Infections - if sepsis or infection is suspected N/A ☐
a) What was the suspected source? .....
b) Treat with antibiotics in accordance with Trust protocol ☐
c) If the ascitic neutrophils >0.25 x 10^9/L (>250/mm^3) (i.e. spontaneous bacterial peritonitis) then give:
i) IV co-amoxiclav or ciprofloxacin if penicillin allergic ☐
ii) Intravenous albumin [20% HAS] 1.5g/kg (20g of albumin in 100ml of 20% HAS) ☐

4. Acute kidney injury and/or hyponatraemia (Na <125 mmol/L) N/A ☐
AKI defined by RIFLE criteria: 1: Increase in serum creatinine ≥ 26μmol/L within 48hrs or; 2: ≥50% rise in serum creatinine over the last 7 days or; 3: urine output (UO) <0.5ml/kg/hr for more than 6 hrs based on dry weight or; 4: Clinically dehydrated
a) Suspend all diuretics and nephrotoxic drugs ☐
b) Fluid resuscitate with 3% HAS or 0.9% saline (250ml boluses with regular reassessment: 1-2L will correct most losses) ☐
c) Initiate fluid balance chart/daily weights ☐
d) Aim for MAP>80mmHg to achieve UO>0.5mg/kg/hr based on dry weight ☐
e) At 6 hrs, if target not achieved or EWS worsening then consider escalation to higher level of care ☐

5. GI bleeding – if the patient has evidence of GI bleeding and varies are suspected N/A ☐
a) Fluid resuscitate according to BP, pulse and venous pressure ☐
b) Prescribe i.v terlipressin 2mg QDS (caution if known ischaemic heart disease or peripheral vascular disease) ☐
c) Prescribe prophylactic antibiotics as per Trust protocol (ofloxacine unless contraindicated) ☐
d) If prothrombin time (PT)prolonged give IV vitamin 10mg stat ☐
e) If PT> 20 seconds – give FFP [2-4 units] ☐
f) If platelets <50 – give IV platelets ☐
g) Transfuse blood if Hb <7.0g/L or massive bleeding (aim for Hb >8g/L) ☐
h) Early endoscopy after resuscitation (ideally within 12 hours) ☐

6. Encephalopathy N/A ☐
a) Look for precipitant (GI bleed, constipation, dehydration, sepsis etc.) ☐
b) Encephalopathy – lactulose 20-30ml QDS or phosphate enema (aiming for 2 soft stools/day) ☐
c) If in clinical doubt in a confused patient request CT head to exclude subdural haematoma — Done ☐ N/A ☐

7. Other
a) Venous thromboembolism prophylaxis – prescribe tinzaparin 3500u SC/day (patients with liver disease are at a high risk of thromboembolism even with a prolonged prothrombin time; withhold if patient is actively bleeding) ☐
b) GI/Liver review at earliest opportunity (ideally within 24 hrs) ☐

Name ..... Grade ..... Date ..... Time .....

Decompensated Cirrhosis Care Bundle - First 24 Hours

The recent NCEPOD report 2013 on alcohol related liver disease highlighted that the management of some patients admitted with decompensated cirrhosis in the UK was suboptimal. Admission with decompensated cirrhosis is a common medical presentation and carries a high mortality (10-20% in hospital mortality). Early intervention with evidence-based treatments for patients with the complications of cirrhosis can save lives. This checklist aims to provide a guide to help ensure that the necessary early investigations are completed in a timely manner and appropriate treatments are given at the earliest opportunity.

- Decompensated cirrhosis (acute on chronic liver failure) is defined as a patient with cirrhosis who presents with an acute deterioration in liver function, which can manifest with the following symptoms:
  - Jaundice
  - Increasing ascites
  - Hepatic encephalopathy
  - Renal impairment
  - GI bleeding
  - Signs of sepsis/hypovolaemia
- Frequently there is a precipitant that leads to the decompensation of cirrhosis. Common causes are:
  - GI bleeding (variceal and non-variceal)
  - Infection/sepsis (spontaneous bacterial peritonitis, urine, chest, cholangitis etc)
  - Alcoholic hepatitis
  - Acute portal vein thrombosis
  - Development of hepatocellular carcinoma
  - Drugs (Alcohol, opiates, NSAIDs etc)
  - Ischaemic liver injury (sepsis or hypotension)
  - Dehydration
  - Constipation

When assessing patients who present with decompensated cirrhosis please look for the precipitating causes and treat accordingly. The checklist shown overleaf gives a guide on the necessary investigations and early management of these patients admitted with decompensated cirrhosis and should be completed on all patients who present with this condition. The checklist is designed to optimise a patient's management in the first 24 hours when specialist liver/gastro input might not be available. Please arrange for a review of the patient by the gastro/liver team at the earliest opportunity. Escalation of care to higher level should be considered in patients not responding to treatment when reviewed after 6 hours, particularly in those with first presentation and those with good underlying performance status prior to the recent illness.

- Targeted education for clinicians is being delivered

An interim re-audit (25 patients) showed of patients with a completed care bundle, 100% with ascites had a tap within 24 hours (compared to 60% if bundle not completed and 62% prior to introduction of bundle).

REFERENCES

1. NHS Atlas of Variation for People with Liver Disease. March 2013 www.rightcare.nhs.uk/atlas
2. National End of Life Care Intelligence Network, Deaths from liver disease. March 2012
3. http://www.ncepod.org.uk/2013report1/downloads/Meauring%20the%20Units_summary%20report.pdf

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