West Midlands Multi-Centre Trainee-Led Audit in the Assessment, Management and Prophylaxis of Spontaneous Bacterial Peritonitis

WMRIG
West Midlands Research in Gastroenterology Group

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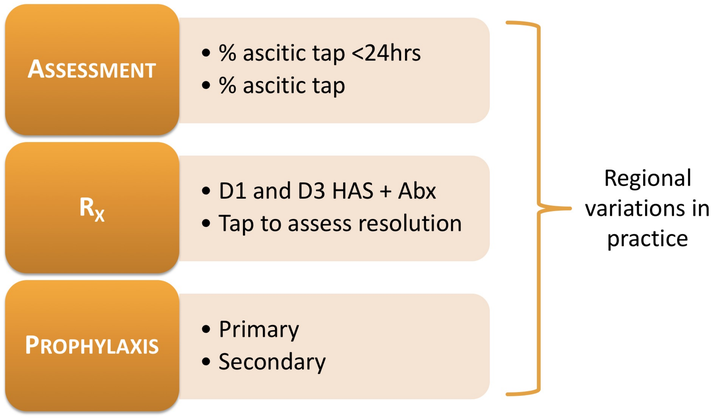
Introduction

- SBP is a frequent complication in patients with cirrhosis and ascites; earlier diagnosis and treatment can improve patient outcomes.
- The WMRIG trainee network was formed in March 2015, consisting of 46 gastroenterology trainees from 13 acute West Midlands Trusts.
- We aimed to perform our first trainee-led regional audit on the assessment, management and prophylaxis of SBP against EASL [1], BSG [2] and NICE [3] recommendations.

Figure 1: Audit Measures



Methods

- **Design**: Retrospective multi-centre audit
- **Inclusion**: Patients with cirrhosis and ascites (ICD-10)
- **Exclusions**: Minimal or malignant ascites, palliative intent, self-discharge
- **Timeframe**: Sep - Dec 2016 with 1 year retrospective follow-up
- **Patient Outcomes**: Mortality, SBP post-discharge
- **Analyses**: Heterogeneity between sites: chi^2

Results

- Trainees from 8 West Midlands Trusts identified 227 patients with 282 admissions.
- Mean age 58yrs (SD 13), 65% male, median follow-up: 8 months.
- 7% had previous SBP; 19% were elective admissions for paracentesis.
- Child-Pugh: A: 3%, B: 48%, C: 49%.

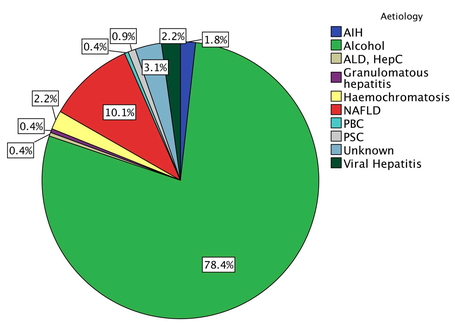


Figure 2: Aetiology of cirrhosis

Figure 3: Participating sites

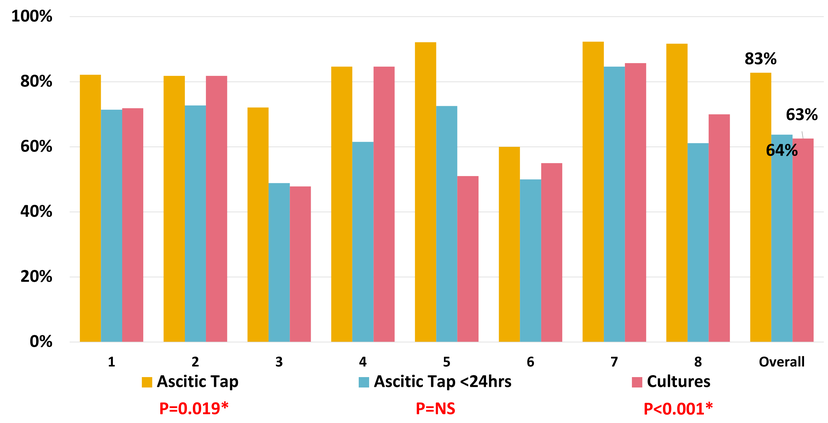


Figure 4: Variation in ascitic tap practice between Trusts

Prevalence of SBP
Admission type: Elective: 7%, Emergency: 19%

Management of SBP:
EASL 2010 : *Administration of human albumin solution (HAS - 1.5 g/kg at diagnosis and 1g/kg on day 3) decreases the frequency of HRS and improves survival. Empirical antibiotics should be started immediately following the diagnosis of SBP.*

Concordance:
D1 HAS: 16/25 (64%),
D3 HAS: 10/25 (40%),
Antibiotics: 23/25 (92%)

Repeat tap to ensure resolution:
EASL 2010 : *Resolution of SBP should be proven by demonstrating a decrease of ascitic neutrophil count to <250/mm^3 and sterile cultures of ascitic fluid, if positive at diagnosis.*

Concordance: 9/27 (33%), Range: 0-52%

Secondary prophylaxis
EASL 2010 : *Patients who recover from SBP have a high risk of developing recurrent SBP. In these patients, the administration of prophylactic antibiotics reduces the risk of recurrent SBP.*

Concordance: 11/25 (44%)

Primary prophylaxis
NICE 2016: *Offer prophylactic oral ciprofloxacin norfloxacin for people with cirrhosis and ascites with an ascitic protein of 15 g/L or less, until the ascites has resolved.*

Concordance: 4/32 (13%). NB ascitic protein not measured in 3 Trusts

Ascitic Protein	SBP after discharge
>15g/L	2 (6%)
15g/L or less	3 (5%)
DK	3 (3%)
All	8 (4%) after median of 32 days

1 patient had been on prophylaxis

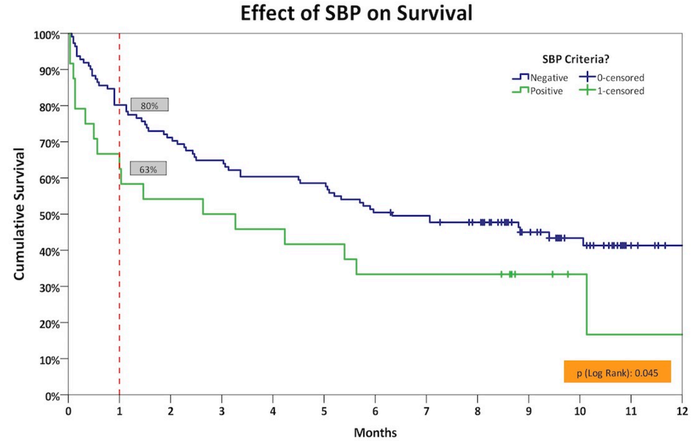


Figure 4: Variation in practice of ascitic tap

Factor	Hazard ratio	P-value
Emergency admission	8.4	0.04
Age	1.03 per increase	0.02
Low ascitic protein	2.3	0.04

On multivariable analysis, older age, ascitic protein 15g/L or less, and emergency admission were associated with mortality.

Key Findings

- Our pilot regional trainee-led audit has identified deficiencies and variations in the assessment, management and prophylaxis of SBP.
- There was poor concordance (<50%) with D3 albumin, primary and secondary prophylaxis and repeat ascitic tap to ensure SBP resolution.
- It is feasible to develop a regional trainee network and successfully audit practise in an area associated with high mortality.
- These results will inform regional quality improvement strategies to improve outcomes in patients with cirrhosis and ascites.

References

1. EASL clinical practice guidelines on the management of ascites, spontaneous bacterial peritonitis, and hepatorenal syndrome in cirrhosis. *J Hepatol*. 2010
2. McPherson S, Response to the NCEPOD report: development of a care bundle for patients admitted with decompensated cirrhosis—the first 24 h. *Frontline Gastroenterol* 2016
3. NICE NG50: Cirrhosis in over 16s: assessment and management, July 2016.