

Acute Bacterial Gastroenteritis: A Retrospective Review of the Clinical Features and Management in a Tertiary Hospital

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Background

Gastroenteritis is usually self-limiting, although can rarely lead to life threatening complications by bacterial organisms.

Antimicrobials and invasive investigations like endoscopy may be over-used.

A faeces molecular screen can be ordered within three days of presentation to the Mater hospital with diarrhea.

→ Salmonella spp, Shigella spp, Campylobacter spp and VTEC

The aim of the study was to investigate the pathogens and their clinical presentation, and to review appropriate investigation and management.

Methods

A list of positive enteric molecular screens from January to December 2019 was obtained from Microbiology.

All data was accessed via the electronic patient record system. Analysed via SPSS: Pearson's Chi sq, One way anova, Kruskal-wallis.

Results

Demographics

57 patients were included in the analysis.

Median age was 36 years, range 17-93 years,

31 patients (54.4%) were male.

Median length of stay was 3 days, range 1-46 days.

Source of infection was identified in 13 patients (22.8%).



Figure 1

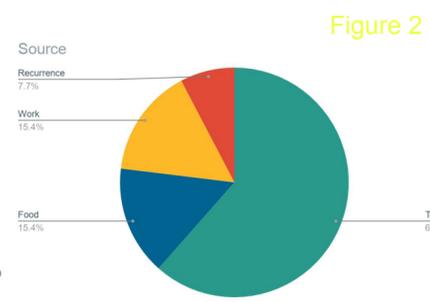


Figure 2

Clinical Features

Table 1

| | Salmonella | | Shigella | | VTEC | | Campylobacter | | Total | |
|-----------------|------------|-------|----------|-------|------|------|---------------|-------|-------|---------|
| | n | % | n | % | n | % | n | % | n | % |
| Cases | 11 | 19.3% | 6 | 10.5% | 5 | 8.8% | 36 | 63.2% | 57 | 101.8%* |
| Symptoms | | | | | | | | | | |
| Diarrhea | 11 | 100% | 6 | 100% | 5 | 100% | 36 | 100% | 57 | 100% |
| Abdominal pain | 7 | 87.5% | 3 | 50% | 4 | 80% | 23 | 71.8% | 37 | 72.5% |
| Vomiting | 6 | 66% | 1 | 16.6% | 1 | 20% | 19 | 57.6% | 27 | 50.9% |
| Fever | 5 | 50% | 2 | 33.3% | 2 | 40% | 16 | 48.5% | 25 | 46.3% |
| Bloody diarrhea | 1 | 20% | 4 | 67% | 3 | 60% | 9 | 30% | 17 | 37% |

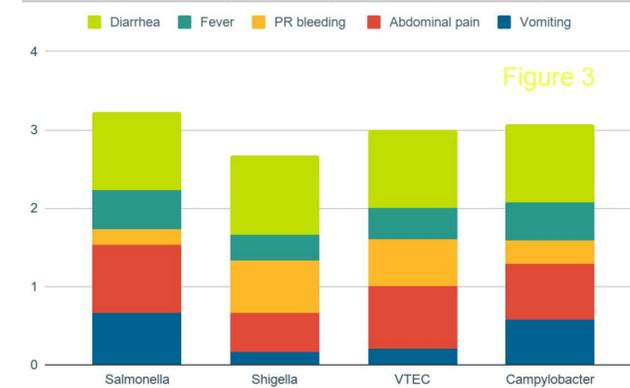


Figure 3

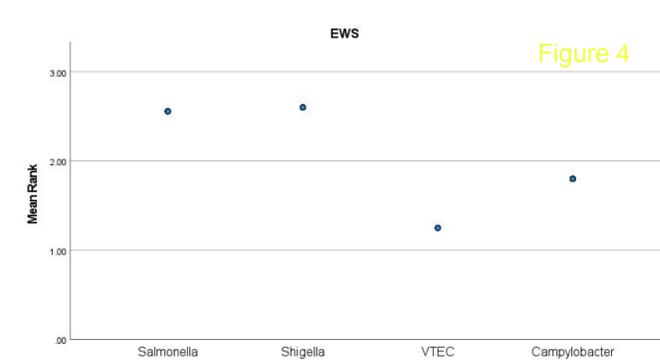


Figure 4

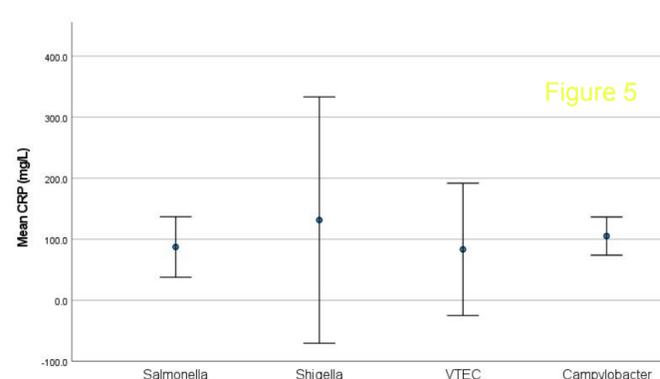


Figure 5

There was no statistically significant correlation between organism detected and symptoms at presentation.

The Salmonella group were the most symptomatic group overall.

The Shigella group presented with highest mean rank EWS (2.6±1.6, p=0.616), and the highest mean CRP (131.4±162.5mg/L, p=0.802).

The Salmonella group had the highest mean creatinine 230.5 ±303.3umol/L, p=0.036).

13 patients (22.8%) had an AKI at presentation, this was highest in the VTEC group (60%, p=0.025).

There was 1 ICU admission in the Salmonella group.

No patients required ionotropic support. There were no deaths.

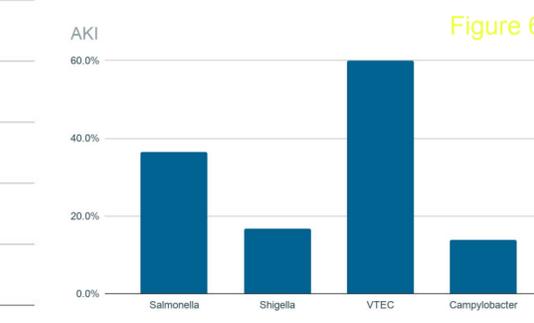


Figure 6

Antimicrobials

28 patients (50.90%) were prescribed any antimicrobial:

→ 17 of 28 (60.7%) were indicated

→ 15 of 28 (53.6%) were the antimicrobial recommended by local guidelines

One patient with VTEC prescribed Ciprofloxacin for 5/7.

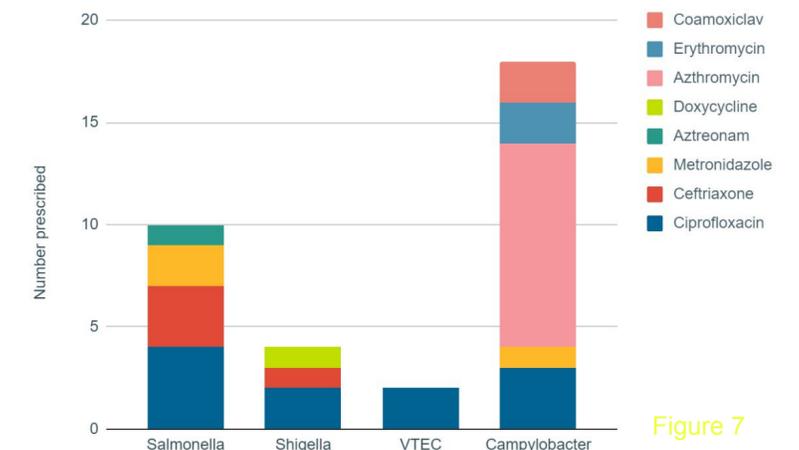


Figure 7

Endoscopy

9 patients (15.8%) had a lower GI endoscopy during admission or within 6 months of discharge. 5 were due to an abnormal CT finding.

87.5% of endoscopy reports were abnormal:

- Ulceration (n=3)
- Colitis (n=4)
- Haemorrhoids (n=1)

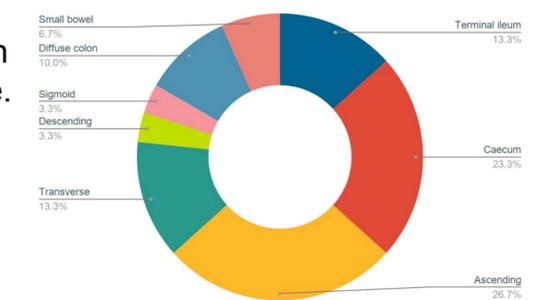


Figure 8

Conclusion

Antimicrobial prescribing was frequently not indicated and out of line with local guidelines, highlighting the need for quality improvement measures.

Judicious use of endoscopy is appropriate in this cohort. The Shigella group presented with the highest acuity and inflammatory markers, although more data is needed. VTEC was associated with AKI on presentation.