Exploring the epidemiology and management of shigellosis in a large acute hospital Trust

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Background

• *S. flexneri*, *S. sonnei*, *S. dysentereria*, *S. boydii*

• Transmission

• Low infective dose

• Persistent/asymptomatic carriage

• Travel/Group sex/Rimming
Non travel exceeds travel related cases

2004... 2012 2013 2014 2015 2016

Increased by 502%

- Decreased by 47%
- Non-travel related in MSM fell by 51%
Clusters

- **S. flexneri 2a**
  - Largest cluster
  - Persisting for 2 years + 4 months
  - 98% are MSM in London
  - Immunosuppression and multiple drug resistance factors contributing to persistence

- **S. sonnei**
  - MSM was the population of the largest cluster
  - Persistent for 39 months
PHE recommendations

– Sexual and travel history
– Increase awareness amongst MSM
– 48 hours post-symptoms/7 days
– Consider antibiotics
Previous data....

• In our unit....
  – In 2012 (looking back 3.5 years)
    • 54 stool positive Shigella spp.
      – 72% (39) S. flexneri
Aim

To review the epidemiology and management of cases in our Trust and compare to national trends
Methods

• All stool cultures between November 2015-January 2018 reviewed for one Trust

• Patient case review of all positive samples
  – Demographic
  – Behavioural data
    • Travel
    • Sexual
  – Species
  – Antibiotics and resistance
  – Prevention advice
Results:

35/6229 stool cultures
Results: Demography

- 94% (33) male
- Median age = 35 yrs (range 16-91 yrs)
- 54% (19) PLWH
- 9% (3) on PREP
- 20% (7) had concomitant STI
## Results: Behavioural data

<table>
<thead>
<tr>
<th></th>
<th>Male (n=33)</th>
<th>Female (n=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sexual history % (n)</td>
<td>Travel history % (n)</td>
</tr>
<tr>
<td>HIV/GU service (n=26)</td>
<td>100 (26)</td>
<td>8 (2)</td>
</tr>
<tr>
<td>A&amp;E/ general medicine</td>
<td>11 (1)</td>
<td>56 (5) *</td>
</tr>
</tbody>
</table>

* 44% (4) had a positive travel history
Results: Behavioural data (2)

MSM

Of those with a documented sexual history (27) – 93% (25) were MSM

- 30% (8) reported fisting/rimming/group sex
- 1 reported foreign travel
## Results: Species

<table>
<thead>
<tr>
<th>Shigella spp</th>
<th>Percentage (%) (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S. sonnei</em></td>
<td>54% (19)</td>
</tr>
<tr>
<td><em>S. flexneri</em></td>
<td>43% (15)</td>
</tr>
<tr>
<td>Mixed</td>
<td>3% (1)</td>
</tr>
</tbody>
</table>
Number of Shigella cases by time

<table>
<thead>
<tr>
<th>Quarter</th>
<th>No of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter 1</td>
<td>Sonnei</td>
</tr>
<tr>
<td>Quarter 2</td>
<td>3</td>
</tr>
<tr>
<td>Quarter 3</td>
<td>3</td>
</tr>
<tr>
<td>Quarter 4</td>
<td>0</td>
</tr>
<tr>
<td>Quarter 5</td>
<td>0</td>
</tr>
<tr>
<td>Quarter 6</td>
<td>1</td>
</tr>
<tr>
<td>Quarter 7</td>
<td>4</td>
</tr>
<tr>
<td>Quarter 8</td>
<td>2</td>
</tr>
<tr>
<td>Quarter 9</td>
<td>1</td>
</tr>
</tbody>
</table>

Time (three monthly intervals between Nov 2015-Jan 2018)
Results: Antibiotics

• 51% (18) treated empirically;
  – 72% (13) ciprofloxacin
  – 33% (6) required change of antibiotic
Results: Resistance

- 31% (12) ciprofloxacin resistance

<table>
<thead>
<tr>
<th>Shigella spp</th>
<th>Ciprofloxacin resistance (%) (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S. sonnei</em> (n=19)</td>
<td>58% (11)</td>
</tr>
<tr>
<td><em>S. Flexneri</em> (n=15)</td>
<td>7% (1)</td>
</tr>
</tbody>
</table>
Prevention

• Poor documentation of infection control measures
  – 6% (2) documented
• 20% (7) were informed about no SI, but with STI
• Direct notification by labs to HPT when details available
  – Deferred to our unit for sexual health numbers (11)
Conclusions: general

• Many of shigellosis cases
  – Men
  – PLWH
  – Reporting sexual risk behaviours

• Cases seen in ED/medicine were unlikely to be asked a sexual history although travel related shigellosis more prominent in this group
Conclusions: Microbiologically

- Predominant species overall and in sexually acquired cases was *S. Sonnei* - differs to previous surveillance data
- Prevalence of quinolone resistance significantly greater in *S. Sonnei* in this sample
Conclusions: prevention

• Poor infection control prevention advice
  – No SI
  – Hand washing/food hygiene
Limitation

- Only reviewed stool cultures
  - Missing data on all gastroenteritis presentations
Thank you