Survival & fungal catheter related blood stream infections (CRBSI) in patients on home parenteral support

Speaker Declarations

• This presenter has the following declarations of relationship with industry

• NONE
Fungal CRBSI

- Fungal CRBSI rare
- Genus *Candida* most common
- Commensal organisms
- 90% invasive infections due to
  - *C. albicans*
  - *C. glabrata*
  - *C. tropicalis*
  - *C. parapsilosis*
  - *C. krusei*
Fungaemia

- Clinical manifestations vary
- Haematogeneous spread
  - Eye
  - Heart
- Mortality rates high (50-80%)
- No data in the IF population
# Study design

## Inclusion criteria
- Documented or reported positive fungal cultures from the CVC line
- Peripheral cultures with time to positivity faster than CVC cultures
- Paired CVC and peripheral cultures
- Positive CVC cultures

## Study period
- Jan 2006 – May 2018

## Data collection
- Demographics
- Type of PS
- Time to infection
- Underlying aetiology
- Alive/died (date of death)
- Presence of gastrostomy
- Colonic continuity at time of infection
- Fungal species
- Bacterial co-infection
- Opiate and immunosuppressive use
Study Aims

• Primary Aim
  – Describe the long term survival of all patients on HPN with fungal CRBSI
  – Identify factors associated with a poorer outcome in patients with a fungal CRBSI

• Secondary Aim
  – Compare the survival of patients with single verses multiple candidal CRBSI
Patients Identified (n=126)

- Excluded (n=60)
- Single fungal CRBSI (n=53)
- Multiple fungal CRBSI (n=13)
Results

- 66 patients (22M : 44F)
- Mean age 49.45 ± 16.54

<table>
<thead>
<tr>
<th>Infective Factors</th>
<th>Patient Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonest Organism: C. albicans &amp; C. glabrata</td>
<td>32 (48.5%)</td>
</tr>
<tr>
<td>Bacterial co-infection</td>
<td>18 (27.3%)</td>
</tr>
<tr>
<td>Anti-fungal resistance</td>
<td>8 (12.1%)</td>
</tr>
</tbody>
</table>
Survival

- 25 (37.9%) patients died

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fungal septicaemia</td>
<td>4</td>
</tr>
<tr>
<td>Unrelated septicaemia</td>
<td>7</td>
</tr>
<tr>
<td>Underlying condition</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
</tr>
</tbody>
</table>
## Overall Survival

<table>
<thead>
<tr>
<th>Time (years)</th>
<th>Percent Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>97</td>
</tr>
<tr>
<td>5</td>
<td>67</td>
</tr>
<tr>
<td>10</td>
<td>53</td>
</tr>
</tbody>
</table>

$p = 0.31$
Survival from different genus/species

- No difference in survival by index species

\[ p = 0.91 \]
Survival with bacterial co-infection

- 1 year survival 88%
- 5 year survival 73%
- No difference if bacterial co-infection at index infection
Factors affecting survival

<table>
<thead>
<tr>
<th>Factor</th>
<th>HR</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.08 (1.03-1.13)</td>
<td>0.02</td>
</tr>
<tr>
<td>Time on PN</td>
<td>0.45 (0.29-0.70)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Small bowel length</td>
<td>0.76 (0.006-0.93)</td>
<td>0.016</td>
</tr>
<tr>
<td>Opiate use</td>
<td>39.5 (3.61-455.08)</td>
<td>0.003</td>
</tr>
</tbody>
</table>
Discussion

• Fungal CRBSI rare
• 30 day mortality only 3%
• Only 6% died directly from complications of fungal infections
• Opioid medications associated with significantly poorer outcome
• Limitations: Small numbers and retrospective.
Acknowledgements

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