Clinical Audit Presentation
1 April 2019
NEUTROPENIC SEPSIS - DOOR TO NEEDLE AUDIT

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Audit completed - September 2018
Background

- Neutropenic Sepsis
  - Oncological emergency – mortality risk
  - *Global prevalence is unknown – lack of epidemiology data (NICE 2012)*

Changes needed to be made to practice as we had significantly worrying “door to needle time” compliance
- 2016 - 2.6%
- 2017 - 8.8%

Following 2016 audit:-
- Placed on Directorate risk register
- Neutropenic sepsis working group was launched (March 2017)
Background cont.

- 2017 Trust Agenda for Sepsis Management
  - Appointment of two Sepsis Lead Clinicians
  - Reviewing practice around sepsis for all area (In-patient/emergency portals)
  - Implementing Trust Screening Tool (Adult/Maternity/Paeds)
  - Education promotion of Sepsis throughout the organisation

THIS WAS PREFECT TIMING FOR US!
Action Plan following 2017 Audit

- Invited to attending ED sepsis work group – sharing practice.
  - *Pivotal moment!! (Collaborative working)*

- Educational drive
  - E-Learning package – all trained nurses within the directorate
  - Academic Meeting – Medical staff (March & Sept 2017)
  - Grand Round (Oct 2017)
  - ED Nurse training (August 2017)
  - Specific inclusion at local induction training (nurses/medics)

- Implementation of Trust Adult Screening Tool
- Patient Group Directive for 1st dose antibiotic administration
- Development of competency base framework for blood culture collection
2018 Audit - 2 Key Aims

1. To re-evaluate compliance for the management of neutropenic sepsis within the Trust

2. To evaluate changes made following 2017 audit action plan

Standards applied:-

- Trust Policy – P17 Neutropenic Fever Policy
- Acute Oncology Service Quality Surveillance Programme (QPS) Measures
- NICE Guidance for Neutropenic Sepsis
- National SEPSIS 6 guidance
- Mortality Rates for Neutropenic Sepsis (NICE 2012)
Methods

• Retrospective audit using an in-house designed audit template

• Audit data period of 1\textsuperscript{st} February to 31\textsuperscript{st} July 2018
  • 6 months of data reflecting QPS measures requirements

• Methodology
  • Cohort identified using in-house AOS database
  • Data collected by reviewing medical records (CWP), TD web results and AOS assessment log sheets

• Inclusion criteria
  • All oncology patients having received SACT within the last 6 weeks who were admitted with signs of sepsis.
  • Neutrophils $\leq 0.5$
Findings

- Cohort
  - Database found 108 patients admitted having received SACT with the last 6 months who were febrile (*110 in 2017*)

- 39 patients were found to had a ANC ≤ 0.5 (36%)
  (*34 (31%) patients in 2017*)

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<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>2016</th>
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<tbody>
<tr>
<td>Male</td>
<td>9 (23%)</td>
<td>13 (38%)</td>
<td>12 (29%)</td>
</tr>
<tr>
<td>Female</td>
<td>30 (77%)</td>
<td>21 (62%)</td>
<td>29 (71%)</td>
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Mean Age

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<td>62 years (61yrs 2017)</td>
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Findings

Admission portals

ED 20 (51%) Vs Durnall 19 (49%)

84% of patients were transferred to/cared for in an oncology bed

(67% in 2017)

Length of stay (median) = 5 days

(4 days in 2017)
Findings

**Adult Sepsis Screening & Action Tool**

54% of all cases reviewed had evidence this pathway was used to screen for sepsis

(15% in 2017)

**Blood Cultures**

Blood cultures taken within an hour of admission = 55%

(20% in 2017)

Taken prior to Abx being given = 76%

(47% in 2017)
## Findings

### Antibiotic Prescribing

41% treatment sheets had missing data.

*(Limitations of retrospective data collection)*

Median average time = 55 mins

*(2 hours 55 mins in 2017)*

### Prescribing to Administration Times

Difficult to produce meaningful data

- Missing abx prescribing times

Median average time = 45 mins

*(2hrs 55 mins in 2017)*
## Findings

### Door to Needle Times

<table>
<thead>
<tr>
<th>Description</th>
<th>2017 Time</th>
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<tbody>
<tr>
<td>Antibiotics administered within 60 mins of</td>
<td>8.8% in 2017</td>
</tr>
<tr>
<td>presenting to hospital</td>
<td></td>
</tr>
<tr>
<td>Median average time</td>
<td>1 hour 8 mins</td>
</tr>
<tr>
<td></td>
<td>3 hours 15 mins in 2017</td>
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### Mortality Rates

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Mortality Rate</td>
<td>2.5%</td>
</tr>
<tr>
<td>Last year's data</td>
<td>(3%)</td>
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<tr>
<td>(NICE mortality rates)</td>
<td>2 to 21%</td>
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This includes all sepsis admissions through ED & Durnall.
Conclusion

There is consistent and steady improvement in ALL areas of the neutropenic sepsis pathway compliance
  • Thanks to collaborative working with ED.

There remains more work to be done (all areas) to achieve the CQUINs Sepsis requirements of 90% for door to needle compliance

Working groups will continue to evaluate compliance/practice:-
  • Impact the introduction of PGDs & blood culture practice will have?
  • Use of pre-filled Abx syringes?
  • Implementation of NEWS2 (help to identify patients specifically at risk of sepsis)