Five years experience of clinical pathway on empirical antibiotics for patients with neutropenic fever in Accident & Emergency Department of Queen Mary Hospital

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Objective

-To administer empirical antibiotics to neutropenic fever patients within 60 minutes from the time of AED registration to antibiotic injection.

Workflow
Cross-departmental collaboration

1. AED
2. Pharmacy
3. Quality and Safety Dep.
4. Medicine (Haematology)

2014

1. AED
2. Pharmacy
3. Quality and Safety Dep.
4. Medicine
(Haematology)

2015

5. Clinical Oncology
6. Medical oncology
7. Surgery
8. Gynae Oncology

2016

2017

2018

2019
Workflow of Clinical Pathway

1. Chemotherapy Alert Card

2. Fever Criteria

   - Neutropenic Fever:
     (Either at home by patient OR at AED)
     - Temperature ≥ 38.5°C (101°F) or
     - Hx of Fever ≥ 38.5°C (101°F) within last 24 hours

   - Yes

3. Triage Category

   - Triage: Category 1 or 2 as per patient’s condition
## Workflow of Clinical Pathway

### 4. Standardized investigation and antibiotics set

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Management Orders</th>
<th>Date &amp; Time</th>
<th>Management Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

- Check: a. CBP (Urgent)
- b. L/R
- c. PT/APTT (Urgent)
- d. Peripheral blood culture

- CXR
- CBP
- R/LFT
- PT/PTT
- Peripheral blood culture
- IV

- IV Meropenem 1g STAT. Reconstitute with 20ml WFI. Slow IV Injection over 5 min. [For patient allergic to Penicillin]
- IV Levofloxacin 500mg STAT. Infuse over 1 hour
- IV Amikacin 500mg STAT. Into 100ml NS Infuse over 1 hour.

### 5. Fast Track antibiotic collection

- [Image of prescription form]

<table>
<thead>
<tr>
<th>Drug Allergy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Known Drug Allergy</td>
</tr>
<tr>
<td>Allergic to:</td>
</tr>
</tbody>
</table>

**ULTRA URGENT**

Manual Prescription for the urgent supply of antibiotic only.

- PLEASE SELECT THE APPROPRIATE DRUG ITEM
- IV Meropenem 1g STAT. Reconstitute with 20ml WFI. Slow IV Injection over 5 min. [For patient allergic to Penicillin]
- IV Levofloxacin 500mg STAT. Infuse over 1 hour
- IV Amikacin 500mg STAT. Into 100ml NS Infuse over 1 hour

**Date & Time**

**Doctor’s Signature:**

**For Pharmacy Use Only**

**Doctor's Name & Code:**

**Date:** [Filled by] [Checked by] [Issued by]
Result (1) No. of recruited patients

Recruited Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>(n=93)</td>
</tr>
<tr>
<td>2015</td>
<td>(n=108)</td>
</tr>
<tr>
<td>2016</td>
<td>(n=349)</td>
</tr>
<tr>
<td>2017</td>
<td>(n=458)</td>
</tr>
<tr>
<td>2018</td>
<td>(n=501)</td>
</tr>
</tbody>
</table>
Result (2) Average Door-To-Antibiotic Time (DTA)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 (n=93)</td>
<td>46</td>
</tr>
<tr>
<td>2015 (n=235)</td>
<td>45</td>
</tr>
<tr>
<td>2016 (n=349)</td>
<td>38</td>
</tr>
<tr>
<td>2017 (n=458)</td>
<td>40</td>
</tr>
<tr>
<td>2018 (n=501)</td>
<td>38</td>
</tr>
</tbody>
</table>
Result (3) Door-to-antibiotics time (DTA) within 60 minutes

<table>
<thead>
<tr>
<th>Year</th>
<th>(n)</th>
<th>≤ 60 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>93</td>
<td>86%</td>
</tr>
<tr>
<td>2015</td>
<td>235</td>
<td>86%</td>
</tr>
<tr>
<td>2016</td>
<td>349</td>
<td>95%</td>
</tr>
<tr>
<td>2017</td>
<td>458</td>
<td>92%</td>
</tr>
<tr>
<td>2018</td>
<td>501</td>
<td>93%</td>
</tr>
</tbody>
</table>
Conclusion

Clinical pathway is an effective tool
1. To reduce variation
2. To organize and standardize
3. To maximize patient outcomes
## Acknowledgement

| 1. Accident & Emergency Department | Dr. Tsang T C  
Mr. Chan W K |
|-----------------------------------|------------------|
| 2. Department of Clinical Oncology | Dr. Luk M Y  
Ms. Pauline Lee |
| 3. Department of Medicine | Dr. Albert Lie  
Ms. Cecilia Kwok |
| 4. Department of Obstetrics and Gynaecology | Dr. Mandy Chu  
Ms. Susanna F P HUI |
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| 7. Department of Surgery | Dr. Dacita Suen  
Ms. Wong L |