OPAT or no-PAT? Evaluation of Outpatient Parenteral Antimicrobial Therapy (OPAT) Patients Receiving Daptomycin or Ertapenem for “Ease of Administration”

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Background
- Outpatient parenteral antimicrobial therapy (OPAT) allows for IV antibiotic treatment with a transition of care to a less acute and costly setting
- Each year, one in 1000 Americans receive OPAT
- Antimicrobial therapy may be broadened upon hospital discharge for “convenience dosing” or “ease of administration” to once-daily administration
- Approximately 17-27% of OPAT patients are readmitted within 30-days of hospital discharge
- Patients requiring subsequent readmission should be appropriately narrowed to minimize collateral damage and reduce cost
- To our knowledge, there is limited literature describing this practice

Objective
To determine whether patients who are discharged on a “ease of administration (EOA)” regimen are continued on this regimen upon hospital readmission during or immediately following OPAT

Methods
- This study has been approved by the Beth Israel Deaconess Medical Center (BIDMC) Institutional Review Board (IRB)
- **Design:** Single-center, observational, retrospective chart review of patients enrolled in OPAT between January 1, 2014 and September 30, 2017

Convenience Dosing Definitions
- Broadening of antibiotic coverage to eraptem or daptomycin upon OPAT enrollment, despite adequate inpatient therapy with more narrow spectrum agents
- Documentation of “convenience dosing” or “EOA” in OPAT note
- Readmitted during or ≤ 3 months following OPAT course

Study Algorithm
Adults discharged from BIDMC between 1/2014 - 9/2017 and enrolled in OPAT (n=1648)

Discharged on eraptem or daptomycin (n=409)

Receiving eraptem or daptomycin for “EOA” (n=188)

Not readmitted during or immediately after OPAT course (n=117)

Readmitted during or immediately after OPAT course (n=71)

Results

<table>
<thead>
<tr>
<th>Characteristic (n=113)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), median [IQR]</td>
<td>57 [49-68]</td>
<td></td>
</tr>
<tr>
<td>Male sex</td>
<td>81</td>
<td>71.0</td>
</tr>
<tr>
<td>Weight (kg), median [IQR]</td>
<td>83 [75-97.7]</td>
<td></td>
</tr>
<tr>
<td>Disposition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>100</td>
<td>88.5</td>
</tr>
<tr>
<td>Extended care</td>
<td>13</td>
<td>11.5</td>
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<tr>
<td>Major OPAT Indications (n=82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osteomyelitis</td>
<td>28</td>
<td>34.1</td>
</tr>
<tr>
<td>Intra-abdominal</td>
<td>22</td>
<td>26.8</td>
</tr>
<tr>
<td>Prosthetic</td>
<td>15</td>
<td>18.3</td>
</tr>
<tr>
<td>Convenience agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daptomycin</td>
<td>31</td>
<td>27.4</td>
</tr>
<tr>
<td>Eraptem</td>
<td>78</td>
<td>69.0</td>
</tr>
<tr>
<td>Both</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>Prior IV antibiotics</td>
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<td></td>
</tr>
<tr>
<td>Daptomycin</td>
<td>65</td>
<td>57.5</td>
</tr>
<tr>
<td>Concomitant agents</td>
<td>43</td>
<td>38.1</td>
</tr>
</tbody>
</table>

Microbiology (n=130):

- *Other: Alcaligenes (1), Bacillus (1), Klebsiella (1), Mucor (1), Panthera (1), Proteus (1), Pseudomonas (1), S. epidermidis (1), S. lugdunensis (1), Stenotrophomonas (1)

Primary Outcome n/N (%)
- Maintenance of “EOA regimen” of antibiotics upon readmission 30/113 (26.5)

Secondary Outcomes n/N (%)
- Reason for Readmission
  - Preplanned admit 30/113 (26.5)
  - Related to OPAT course 41/113 (36.3)
- ID Consult
  - Consultation 54/113 (47.8)
  - Promoted de-escalation 16/54 (29.6)
- Antimicrobial Stewardship Intervention
  - Continued “EOA regimen” 10/54 (18.5)

Adverse Events n/N (%)

- Transaminitis 2/35 (5.7)
- Drug-induced fever 2/82 (2.4)
- Seizure 2/82 (2.4)
- Transaminis 1/35 (2.9)
- Hematologic 1/35 (2.9)
- C. difficile infection 3/35 (8.6)

Disclosures
The authors have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

Limitations
- The retrospective, observational design may limit any definitive conclusions
- Data collection was limited to information documented in medical records
- Readmissions at other institutions were unable to be captured to fully determine continuation rates
- Resistance rates from the use of broad-spectrum antimicrobials were unable to be determined
- All indirect and direct costs were not accounted for

Conclusions
- Roughly ¼ of OPAT patients who were readmitted were initially continued on “EOA” dosing regimens
- Better provider order entry indication documentation and coordination between OPAT and stewardship teams may facilitate appropriate regimen tailoring in certain patients upon hospital readmission during OPAT