Evaluation of Midodrine Use on Clinical Outcomes in Septic Shock

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### Background

- Intravenous (IV) vaspressors are used in the intensive care unit (ICU) to provide adequate organ perfusion in septic shock.
- While there are guidelines on initiation, there are currently no guidelines on discontinuation upon septic shock resolution.
- IV vaspressors delay ICU discharge as they cannot be administered in less acute care areas.
- Midodrine is an oral alpha-one agonist commonly used in practice to facilitate IV vaspressor weaning and reduce ICU length of stay (LOS).

### Purpose

- To evaluate the efficacy and safety of oral midodrine in weaning IV vaspressors in patients with septic shock in the ICU.
- To compare clinical outcomes in patients who received only IV vaspressors versus those who received oral midodrine in addition to IV vaspressors.
- To quantify rate of adverse effects associated with oral midodrine use.

### Methods

- IRB approved retrospective chart review.
- Patients meeting inclusion and exclusion criteria between January 1\textsuperscript{st}, 2018 and December 31\textsuperscript{st}, 2019 were included for analysis.
- Patients were divided into two groups:
  - IV vaspressors
  - IV vaspressors + oral midodrine.
- Patients in the two treatment arms will be case-matched based on severity of illness, age, and gender.

### Inclusion/Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Admitted to the MSICU</td>
<td>• Received midodrine without a vasopressor</td>
</tr>
<tr>
<td>• Received at least one IV vasopressor</td>
<td>• Age &gt;89 years</td>
</tr>
<tr>
<td>• Diagnosis of septic shock</td>
<td>• Patients receiving intermittent hemodialysis</td>
</tr>
<tr>
<td>• Age &gt;18 years</td>
<td>• Pregnant patients</td>
</tr>
<tr>
<td>• Male and female</td>
<td></td>
</tr>
</tbody>
</table>

### Mediations Included in Evaluation

<table>
<thead>
<tr>
<th>IV Vaspressors</th>
<th>Oral Midodrine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dopamine</td>
<td>5 mg</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>10 mg</td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>15 mg</td>
</tr>
<tr>
<td>Phenylinephrine</td>
<td>20 mg</td>
</tr>
</tbody>
</table>

### Results

- **Primary Outcome**
  - ICU LOS (days)
- **Secondary Outcomes**
  - Hospital LOS (days)
  - Duration of vasopressor use (days)
  - Mortality
  - Incidence of adverse effects associated with midodrine use: hypertension (BP >160/90), bradycardia (HR <60 bpm)

### Conclusion/Application to Practice

- Based on results, provide recommendations to develop a hospital protocol for use of oral midodrine to wean patients off IV vaspressors upon resolution of septic shock in the ICU.

### References


### Disclosure/Acknowledgements

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