Study Design
- Retrospective chart review
- All patients who received IM olanzapine in the ED
- October 1, 2011 through July 31, 2013

Data Collection
- Demographics
- Past medical history
- Chief complaints/diagnosis
- Vital signs and oxygen saturation
- History of alcohol or substance abuse, and serum alcohol level at admission
- Dose/sequence/frequency/timing of all antipsychotics, BZDs, anticholinergics and CNS depressants administered
- Disposition of patient

Outcome Measures
- Safety
  - Cardiorespiratory depression
  - Excessive sedation
- Efficacy
  - Need for physical restraints
  - Total amount of olanzapine given
  - Need for additional antipsychotics or agents with sedative properties

Patient Enrollment and Exclusion
- Included: Received IM olanzapine in the ED
- Excluded: Pregnancy, Younger than 18 years of age, Olanzapine not given in the ED, Received oral olanzapine

Preliminary Results

<table>
<thead>
<tr>
<th>Side Effects</th>
<th>N (%)</th>
<th>SBP</th>
<th>DBP</th>
<th>HR</th>
<th>RR</th>
<th>BP Sat</th>
<th>PT</th>
<th>Time to Max Change (Hours)</th>
<th>Average Change (mm Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB</td>
<td>43.4</td>
<td>68.8</td>
<td>81</td>
<td>28.5</td>
<td>140.5</td>
<td>82.2</td>
<td>93.4</td>
<td>22.5</td>
<td>144.6</td>
</tr>
<tr>
<td>DBP</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>70%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP Sat</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inclusion
- Received IM olanzapine in ED
- Documented vital signs and oxygen saturation prior to drug administration & within 4 hours afterwards

Conclusions
- Preliminary data suggests that when compared to intramuscular olanzapine alone, the combination of intramuscular olanzapine with benzoazepines has less adverse effects on blood pressure and is less efficacious in the treatment of acute agitation in the emergency department.
- Complete data collection and analysis
- Revise treatment recommendation on existing order set for the management of acute agitation, if applicable
- Perform cost-savings analysis

References

All authors of this presentation 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.
Coccidioidomycosis is endemic in the Central Valley of California. California reported a total of 4,094 cases in 2012.1 During 2012, the top three counties with the highest number of reported cases were Kern (1859), Fresno (475), and Los Angeles (321) counties.1

Fluconazole, itraconazole, and amphotericin B are the traditional antifungal treatment options for coccidioidomycosis; however, patients may not clinically respond to these agents.2

The disease process can manifest as a self-limited flu-like process or fulminant respiratory failure. Approximately 1% of all coccidioidomycosis infections disseminate, affecting the bones, joints, skin, central nervous system, or organs.2

Voriconazole has shown favorable effects in patients with refractory coccidioidomycosis. Early initiation of voriconazole therapy could prevent disease progression, avoid or decrease hospital stay, and decrease healthcare costs.3,4

This study proposal was submitted and approved by the Institutional Review Board at Community Regional Medical Center. All data will be recorded without patient specific identifiers and maintained in a confidential manner to protect patient privacy.

### Study Design

- Observational retrospective study of patients with coccidioidomycosis who were hospitalized between 2005 and 2013.

### Data Collection

- Patient characteristics, antifungal therapy, and disease course data were collected from electronic and paper medical records.

### Inclusion Criteria

- Diagnosis of coccidioidomycosis infection
- Voriconazole therapy initiated after traditional antifungal treatment failure
- 18 years of age and older

### Exclusion Criteria

- Pregnancy

### Objective Measures

### Parameters for disease regression

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Anticipated effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever/Chills</td>
<td>Resolution</td>
</tr>
<tr>
<td>Rash</td>
<td>Resolution</td>
</tr>
<tr>
<td>Weight</td>
<td>Increased or maintained</td>
</tr>
<tr>
<td>Cough</td>
<td>Resolution</td>
</tr>
<tr>
<td>Pain</td>
<td>Decreased or maintained</td>
</tr>
<tr>
<td>Radiographic studies</td>
<td>Lesions/no change/stable</td>
</tr>
<tr>
<td>Serologic tests</td>
<td>Decreased antibodies/no change</td>
</tr>
</tbody>
</table>

### Source of Coccidioidomycosis Exposure

1. Unknown
2. Agriculture
3. Correctional Facility
4. Construction
5. Food/Service Industry
6. Office/Academia

### Ethnicity of Study Subjects

- White
- African American
- Latino
- Other

### Risk Factors for Disease Progression

- Unknown
- Voriconazole

### FUTURE DIRECTION

- Continued research is needed to distinguish common characteristics in patients non-responsive to traditional therapy for coccidioidomycosis infections. These characteristics may predict the need for voriconazole earlier in the course of coccidioidomycosis treatment, preventing disease progression.

### REFERENCES

Efficacy of Extended Infusion Cefepime and Meropenem in Trauma and Burn Intensive Care Unit Patients at a Level One Trauma and Burn Center

Christina J. Wong, Pharm.D., Melissa A. Reger, Pharm.D., BCPS, Marisa N. Méndez, Pharm.D., BCPS and Ann W. Vu, Pharm.D., BCPS

Community Regional Medical Center – Fresno, California

BACKGROUND

- Broad spectrum beta-lactam antibiotics, such as cefepime and meropenem, are frequently utilized in the intensive care unit (ICU) setting.
- Compared to traditional intermittent infusion, extended infusion administration of beta-lactam antibiotics has been shown to improve outcomes, such as decreased mortality rate and length of stay (LOS), mainly in the general medicine population.
- Extended infusion administration has not been extensively studied in the trauma or burn ICU population, a unique subset of patients who are often in a hypermetabolic state.

OBJECTIVES

- Compare efficacy of cefepime and meropenem in trauma and burn ICU patients before and after the implementation of a hospital-wide “Automatic Substitution to Extended Infusion for Select Beta-lactams” protocol.
- Evaluate the effect of extended infusion regimens on rates of infection recurrence, all-cause mortality, hospital LOS, and ICU LOS.
- Determine whether the extended infusion regimen provides cost-savings.

METHODOLOGY

Study Design

- Retrospective chart review

Inclusion Criteria

- Patients admitted to trauma or burn ICU service during study periods
- Receipt of cefepime or meropenem for a minimum of 5 consecutive days

Exclusion Criteria

- Less than 18 years of age
- Receiving concomitant beta-lactam antibiotics
- Insufficient microbiologic data
- Defined as negative cultures or absence of cultures
- Organism not sensitive to cefepime or meropenem
- Incarcerated patients
- Pregnant patients

Data Collection

- Antibiotic selection and history
- Microbiologic culture and sensitivities data
- Injury Severity Score and injury site
- Total body surface area burn
- Length of mechanical ventilation (if applicable)
- Concomitant infections
- Infection recurrence
- Hospital/ICU LOS
- All-cause mortality through hospital discharge
- Total cost of therapy

OUTCOME MEASURES

- Acquisition cost of antibiotic
- Hospital/ICU LOS

RESULTS

Preliminary Results

- Pre-implementation:
  - 103 trauma charts reviewed
  - 8 patients met inclusion criteria

- Post-implementation:
  - 121 trauma charts reviewed
  - 8 patients met inclusion criteria

- Preliminary data suggests that, compared to traditional intermittent infusion, extended infusion administration of cefepime in the trauma ICU population may result in a greater rate of infection recurrence.
- The current study period is insufficient to conduct analysis on an adequate number of subjects to determine the desired outcome measures.

FUTURE DIRECTION

- Complete data collection and statistical analysis
- Conduct subgroup analysis comparing outcomes in trauma versus burn patients
- Submit Institutional Review Board Research Study Modification Form to extend study period

REFERENCES


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