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Medication Use Evaluation of Angiotensin II

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BACKGROUND

- Angiotensin II is a vasopressor agent used for septic shock and has been found to effectively raise the blood pressure in patients who did not respond to other conventional high dose vasopressors.
- Angiotensin II's wholesale acquisition cost (WAC) of $1800 per vial creates a significant financial burden for health care institutions.
- A limited warranty manufacturer program replaces angiotensin II vials in patients not achieving an increase in mean arterial pressure (MAP) of at least 10 mmHg or to >65mmHg within the first 3 hours of initiation.

Parkview Health Angiotensin II Restriction Criteria

Refractory hypotension with 3 pressors at max doses -OR- 2 pressors at max doses with a contraindication

Receiving stress dose steroids

On discontinuation, angiotensin II must be weaned off first before other pressors

OBJECTIVE

Evaluate compliance with angiotensin II institutional restriction criteria and assess response to therapy to determine if cost savings through limited warranty program could be realized through therapy response evaluation.

METHODS

- The Parkview IRB approved a retrospective chart review.
- Patient Population
  - Adults who received at least one dose of angiotensin II from Jan-2019 to May-2022.
- Outcomes
  - Proportion of patients who received angiotensin II per institutional restriction criteria.
  - Percentage of patients having a response to angiotensin II (defined as an increase of MAP of 10 mmHg or reaching a MAP of 65 mmHg.
  - Potential cost-savings achievable through the manufacturer limited warranty program.

Disclosure

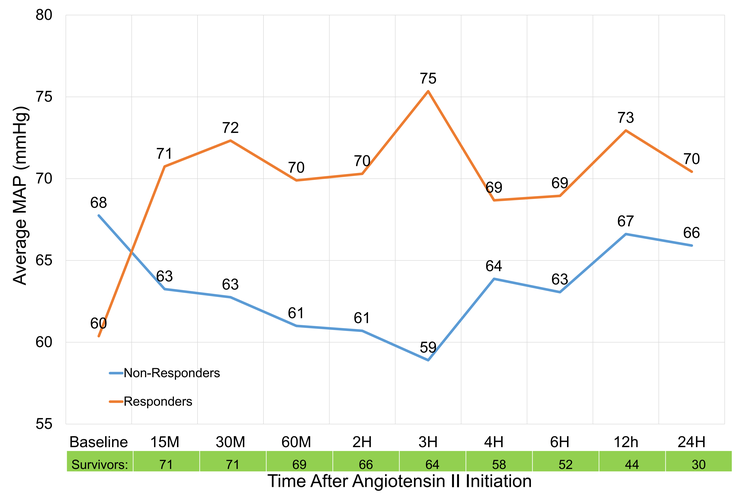
All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

RESULTS

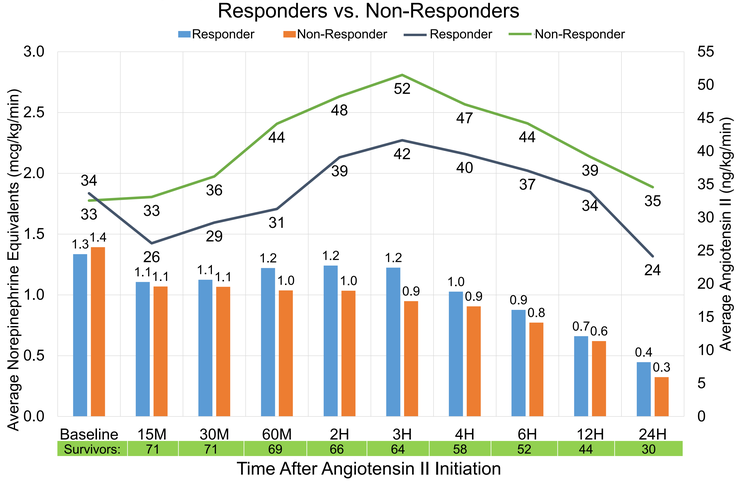
Patient Characteristics (n=72)	
Male Sex, n (%)	47 (65.3)
Age on Admission, years	59 (14)
Weight, kg	100.3 (33)
Lactate, mmol/L	5.8 (5.2)
MAP, mmHg	62 (17)
Heart Rate, bpm	105 (32)

Results are reported in mean (± Standard Deviation)

Average MAP Over Time of Responders vs. Non-Responders

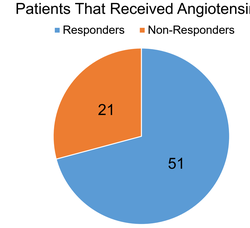


Norepinephrine Equivalents and Angiotensin II Doses of Responders vs. Non-Responders

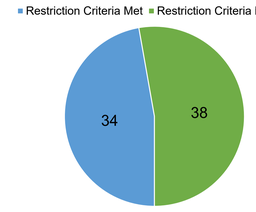


RESULTS

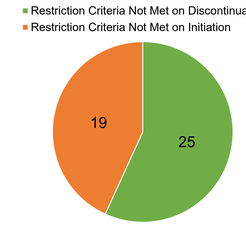
Patients That Received Angiotensin II



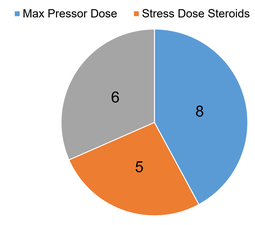
Restriction Criteria Compliance



Restriction Criteria Not Met; Breakdown



Reasons for Initiaiton Restriction Criteria Failure



Total potential cost savings based on 1 bag of angiotensin II per non-responder by $1800 per bag: $37,800

DISCUSSION & CONCLUSIONS

- 47% of the patients who received angiotensin II met restriction criteria, with 50% of those patients not meeting criteria on initiation.
- The most common reason for restriction criteria not being met was vasopressors not being at maximum dose.
- Response rate to angiotensin II is comparable to the ATHOS-3 trial (70.8% vs. 69.9%), despite greater shock severity.
- The institution may have saved $37,800 by participating in the limited warranty program and should consider enrolling in this program in the future.
- Patients who will respond to angiotensin II will typically experience an increase in MAP almost immediately.
- Pharmacists may play a role in early discontinuation recommendations to assist with cost savings.

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