Reviewer's report

Title: Fenoldopam use in a burn intensive care unit: a retrospective study

Version: 1 Date: 30 March 2010

Reviewer: Tina L Palmieri

Reviewer's report:

Brief Summary: This paper reports the use of fenoldopam in patients treated at a single burn center 2005-8. They report that fenoldopam increased systolic blood pressure and urine output, as well as a concomitant decrease in vasopressor dependency index in the 48 hours after fenoldopam initiation. They conclude that a randomized trial of fenoldopam in critically ill burn patients with AKI is warranted.

- Major Compulsory Revisions

1. Although the authors state that all patients had AKI, a clear definition of what constituted AKI is not given. Please provide a clear and concise definition of the inclusion criteria, specifically in regard to how kidney function was defined.

2. Please clearly state the criteria for initiation and discontinuing of fenoldopam.

3. Patients on hemodialysis or renal replacement therapy were excluded. Why? Were patients who progressed to renal replacement therapy (i.e. treatment failures) also excluded?

4. What was the etiology of renal dysfunction? Was there a difference in outcomes in sepsis vs. drug-induced problems?

5. Although fenoldopam was used at times of instability in these patients, other therapies, such as antibiotics, surgical drainage, line change, ventilator changes, etc. also likely happened. What other changes in care occurred during the 48 hour period? Was the improvement due to fenoldopam or definitive treatment of the underlying problem?

6. This would be a more effective study if a matched cohort with similar burn size, AKIN criteria who were treated without fenoldopam were compared to the group treated with fenoldopam.

7. Why was a one-way ANOVA used?

8. How does the cohort mortality compare to predicted mortality for this size of burn injury?
9. Similar arguments have been made for dopamine in the past. What is different about fenoldopam? Increased urine output does not necessarily equate to better outcomes.

10. Please provide objective data other than urine output that supports improved renal perfusion. Is fenoldopam renal protective, or just acting as a diuretic?

11. Please provide a comprehensive list of fenoldopam side effects, toxicities, potential drug interactions to inform readers of potential dangers of the drug other than hypotension.

12. Mean volume of maintenance fluids for these patients (Table 4) was >300 ml/hr prior to fenoldopam. Please provide rationale behind this intravenous fluid rate. What was the calculated insensible loss for these patients?

13. Were there changes in mean arterial blood pressure with fenoldopam use? Systolic pressure is not always the best representation of perfusion.

14. In Figure 4, urine output averages almost 80 ml/hr pre-treatment and approximately 90 ml/hr post-treatment with fenoldopam. In general, 30-50 ml/hr of urine output is considered to be adequate after burn injury. Were these patients overhydrated?

- Minor Essential Revisions

The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

1. Please provide mean values with standard error as well as median with IQR for all values in Table 1.

2. Please provide table of AKIN stage and mortality

3. For Table 2,3,4 please provide mean and standard error for all fields.

4. Please provide error bars for AKIN stage (Figure 1)

5. In Figure 6 and 7, please provide error bars for the modified inotrope score and Vasopressor Dependency Index. Also, provide clarification of exactly which time points were statistically significant changes.

- Discretionary Revisions

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

1. There are no figure titles or figure legends.

**Level of interest:** An article of limited interest
Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests