Reducing Nicardipine Use in Hypertensive ICH Patients

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The Problem
The use of intravenous nicardipine to reduce blood pressure is one of the most costly interventions in the Neuro ICU for hypertensive intracerebral hemorrhage (ICH) patients. Transitioning to an oral antihypertensive regimen can help to minimize unnecessarily prolonged ICU stays and help to ensure that patients will leave the hospital on an effective oral regimen as well as decreasing costs.

Project Goal
Decrease median duration of nicardipine use in hypertensive ICH patients to less than 72 hours (15% lower than the baseline median duration in 2010).

Project Plan
A list of monthly ICH patients was tracked by residents on the neurovascular service and provided to pharmacists who queried the pharmacy database to determine nicardipine use per patient and calculate the monthly median. The Neurovascular team discussed blood pressure management strategies daily on team rounds to ensure that transitioning from IV to oral agents was approached in a way that was safe and optimal for clinical care.

Results / Progress to Date

- A total of 41 hypertensive ICH patients received nicardipine on the Neurovascular Service between June 2011 and May 2012.
- The monthly median nicardipine use has ranged from 6.25 to 73 hours.
- The overall median nicardipine duration for the year to date is 33 hours.

Lessons Learned
Feedback from residents on the Neurovascular Service indicated that making specific plans to reassess blood pressure response more than once per day greatly helped to expedite the transition off of nicardipine. Collaboration between pharmacists and clinicians was crucial to the success of this project, and the dedication of pharmacists allowed us to continue this project during the transition to a new pharmacy system mid-way through the project.

Moving Forward
Additional populations of patients that would benefit from judicious use of nicardipine and earlier transition to oral antihypertensives include a portion of subarachnoid hemorrhage patients (not in vasospasm) at UCSF as well as the large population of patients with intracranial hemorrhages cared for by our residents on the Neurocritical Care Service at San Francisco General Hospital.