

## Journal Watch

### **A study comparing hyoscine hydrobromide and glycopyrrolate in the treatment of death rattle**

Back I.N., Jenkins K, Blower A, Beckhelling J. Palliative Medicine 2001; 15: 329-336.

Prepared by: Dr. Debra Slade

Received during: Case Rounds , September 11, 2001

#### **Abstract:**

This study looked at the efficacy of drug treatment in managing death rattle in a 39-bedded specialist palliative care unit. The study was conducted in two phases. In the first, patients received hyoscine hydrobromide as the antimuscarinic; glycopyrrolate was used in the second phase. The patients in the two phases were well matched for diagnosis, age, sex and duration of death rattle. A noise scale of 0-3 was used, which was separately validated using a verbal rating scale and noise-metre readings. Noise scores were taken at the start; 30 min after an antimuscarinic drug was administered; an hour after the initial injection if a repeat dose was given at 30 min; and 4-hourly thereafter. Drug charts of all patients with death rattle were analysed to ascertain the amount of each drug given and the cost. The incidence of death rattle was 44% in phase 1, and 36% in phase 2. The percentage of patients with reduced noise scores 30 min after one injection of hyoscine was significantly greater than after one dose of glycopyrrolate (56% vs. 27%,  $P = 0.002$ ). The need for a second injection after 30 min was less using hyoscine (33% vs. 50%)  $P = 0.03$ . There was no statistically significant difference in improvement at 1 h, or at the last recorded score before death. A comparison of the cost of drug treatment using hyoscine or glycopyrrolate was made, and the potential reduction in cost per patient in the glycopyrrolate group was largely offset by increased expenditure on other drugs, especially diamorphine, midazolam and levomepromazine. The results of this study suggest that: (1) glycopyrrolate 0.2 mg is less effective at reducing death rattle than hyoscine hydrobromide 0.4 mg when assessed at 30 min, (2) the use of glycopyrrolate may lead to an increase need for other sedative or anti-emetic medication such as diamorphine, midazolam or levomepromazine and (3) the cost benefit of using glycopyrrolate over hyoscine hydrobromide is a small part of the total drug budget, and may be less than anticipated due to the increased need of these other drugs.

#### **Comments:**

##### Strengths/uniqueness:

- Thoughtful examination of actual cost savings and medical appropriateness in a situation where a change in therapeutic protocol was driven predominantly by financial concerns
- Thorough and comprehensive cost analysis
- Significant number of patients entered into the study – 191 in both phases
- Diagnostic group percentages were similar in both phases
- Costs were compared between a hospital-based palliative care unit and a community pharmacy

### Weaknesses:

- Scoring scale depends on the assessor's ability to hear and doesn't seem to take into account background noise (ie. whether the room was near the nursing desk, level of noise in the patient's room)
- No indication of why patients who were appropriate for the study were not entered - nursing staff fatigue was mentioned
- Two sequential time periods- bias could be introduced by factors dependant on this ie. change in nursing staff etc.
- Not a randomized controlled trial – but would take 12 years or a multi-centered study to collect data
- Would have been interesting to see the effect of different doses of glycopyrrolate and cost impact of these
- During the time periods had there been any educational interventions which might have affected the outcome?
- Would have been helpful to have verbal rating score validation data included

### Relevance to Palliative Care:

- A common and very distressing symptom to patients and caregivers
- It's important to continually reassess whether our protocols are medically appropriate and cost effective particularly in times of budgetary restraints