UPMC PALLIATIVE AND SUPPORTIVE INSTITUTE

THE TABLET: PALLIATIVE CARE PHARMACY TIPS

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If you have a topic you would like the pharmacy team to answer, please send your suggestions to: lowrymf@upmc.edu

TODAY'S TOPIC:

Methocarbamol for Acute Pain

Background:

Methocarbamol is a central nervous system depressant with sedative and musculoskeletal properties. Currently, there is little evidence that methocarbamol use in the setting of acute pain improves pain control. In the palliative care environment, adequate pain control may be difficult to achieve, and targeting multiple nociceptive pathways may have a synergistic effect in minimizing discomfort. Use of nonopioid adjunctive agents such as methocarbamol for pain control has increased considerably with consideration for multimodal analgesia regimens to potentially reduce overall opioid requirements. Not much data exists for evidence with use of methocarbamol in the acute setting, or with a palliative care population.

Importance:

The inadequate management of pain can lead to adverse physiological and psychological consequences that can result in increased morbidity and poor overall outcomes. Although opioids are the mainstay of pain management in the palliative care setting, the use of nonopioid adjuncts as part of multimodal therapy has been recommended. It is important for our palliative care clinicians to be aware of the current data and if it can be extrapolated to our population.

The Literature:

Am J Ther. 2017 Mar/Apr;24(2):e202-e206.

Effect of Methocarbamol on Acute Pain After Traumatic Injury

Methods: Retrospective, matched cohort study

- Patients hospitalized (6/1/12-6/30/13) due to traumatic injury for equal to or greater than 3 consecutive days who were treated with methocarbamol for pain control
- Patients assigned a propensity score based on age, sex, International Classification of Disease Ninth Edition-derived Injury Severity Scores (ICISS)
- Selected patients matched 1:1 to a control group, who did not receive methocarbamol based on propensity score

Outcomes:

- Pain scores (0-10)
- Opioid requirements and hospital length of stay

Results: (n=200); average age =49+/-22 years

- The most common total daily dose of methocarbamol was 2250mg (35%), followed by 2000mg (25%),1500mg (23%), and 3000mg (17%)
- Mean pain score of 7.4+/-2.6 in the methocarbamol group, 6.8+/-3.2 in the control group, with a meaningful reduction in pain considered to be 1.3
- Higher opioid requirements on the first day after study enrollment (62.9+/-47.9 versus 38.9+/-44.9) with no significant difference on days 2 and 3
- Mean length of stay similar across both groups (4.9+/-2.8 versus 5.4+/-3.9 days)
- An adverse effect of interest included respiratory depression with hypoxia, in which 2 patients in the methocarbamol group were implicated, however this was attributed to opioid use and was managed with naloxone

Conclusion:

- Use of methocarbamol after traumatic injury did not reduce pain during hospitalization, opioid consumption, or hospital length of stay
- Methocarbamol use did not contribute to any adverse events of interest, but the results suggest that it does not produce any appreciable benefit

Ann Pharmacother. 2021 Jun;55(6):705-710.

Efficacy of Methocarbamol for Acute Pain Management in Young Adults with Traumatic Rib Fractures

Methods: Retrospective, single-center cohort study

- Patients admitted with 3 or more rib fractures (7/1/14-7/30-18)
- Methocarbamol was added as a suggested adjunctive agent to the institution's rib fracture protocol and electronic order set in October 2015 at 500mg every 6 hours, with the option to titrate up to 600mg every 8 hours for pain control
- Adverse effects attributed to methocarbamol were identified by chart documentation with subsequent discontinuation of the medication

Outcomes:

- Primary: Daily opioid requirements
- Secondary: hospital length of stay and diagnosis of pneumonia, which was determined by chart documentation and prescription of antimicrobial therapy for the indication at any time during hospital admission

Results: premethocarbamol (n=22), methocarbamol (n=28); mean age premethocarbamol (27.6+/-5.6), methocarbamol (30.4+/-5.5)

- No difference in opioid requirements was observed during the first 2 days of admission, however patients who remained admitted on hospital day 3 received significantly less opioids in the post methocarbamol group
- Patients who received methocarbamol also required a lower median amount of cumulative opioids (219 vs 337mg OMEs; P=0.01)
- No difference in incidence of pneumonia was observed, but the hospital LOS was significantly shorter in the post-protocol group (3 vs 4 days; P=0.03)

Conclusion:

- Data suggests that the addition of methocarbamol to the pain management protocol for rib fractures was associated with decreased opioid exposure in young adults during the first 3 days of hospital admission, as well as reduced hospital length of stay
- Use of methocarbamol as an analgesic-optimizing, opioid-sparing multimodal agent may be reasonable

Bottom Line:

- Two retrospective cohort studies investigated use of methocarbamol for acute pain management in post-trauma settings; it may be difficult to extrapolate these results to our patient population given the specific inclusion criteria and low level of evidence of these studies
- Mixed evidence exists for methocarbamol reducing opioid requirements and pain scores, and it is difficult to determine causality from retrospective chart reviews
- It is unclear how methocarbamol dose in acute pain management correlates to pain reduction, opioid consumption, or hospital length of stay
- Common adverse effects of methocarbamol such as somnolence or oversedation were not reported in these studies. This does not allow us to make conclusions regarding risk-benefit ratio for these agents. Of note, respiratory depression with hypoxia was attributed to concomitant opioid use

CLINICAL PEARL: ***Methocarbamol has poor evidence for pain score reduction, and mixed evidence for decreasing opioid requirements and overall hospital length of stay in acute pain situations.***