



PIC QUESTION OF THE WEEK: 02/21 /05

Q: A patient with late-stage COPD has been prescribed morphine sulfate 5mg via nebulizer every four hours as needed. What is the rationale for using nebulized morphine?

A: Evidence supporting the efficacy of nebulized morphine is limited and somewhat controversial. This method of administering morphine has been evaluated in a number of diseases including late stage COPD, cystic fibrosis, lung neoplasms, etc. The benefits of nebulized morphine are noted by a reduction of dyspnea, increased exercise tolerance, decreased anxiety, and improvement in well-being. The mechanism by which nebulized opiates improve respiratory symptoms is not well established. It is most likely due to inhibition of local opioid receptors in the lungs as well as depression of respiratory centers in the CNS. Systemic effects and possible antagonism of spinal cord receptors may also contribute to the benefit of nebulized morphine. The patient's response to hypoxia and hypercapnia may also be affected by this route of morphine administration. In almost all studies systemic adverse effects have not been reported. Published clinical trials of nebulized morphine have been poorly designed, addressed different diseases, and used a variety of protocols. Because of these limitations, it is difficult to establish the true role of nebulized morphine in any disorder. Dosages have been highly variable and ranged from 2 to 40 mg every 4 hours. According to the "Global Initiative for Chronic Obstructive Lung Disease" sponsored by the National Institutes of Health, there is insufficient evidence supporting routine use of nebulized morphine. Until further studies are completed, this treatment should be reserved for select patients who have failed other therapies.

References

- Foral P. Nebulized opioids use in COPD. Chest 2004;125:691-4.
- Lin S, Marjomacki D, Toll L, et al: Morphine. Micromedex. In: Hutchison TA and Shahan DR (EDs): DRUGDEX® System. Micromedex, Greenwood Village, Colorado (Edition expires March, 2005).

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