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Risk Management Pitfalls For Asthma Management In The Emergency Department

1. **"The treatment seemed straightforward; I didn't think their home situation was any of my business."** Psychosocial problems need to be identified and addressed as part of asthma management, because, even with best practice, these problems place patients at an increased risk of dying. Family psychosocial problems and financial problems are associated with increased risk of mortality for patients aged > 31 years but not for younger patients. Males were at increased risk of mortality from asthma exacerbation overall, but females with family problems are at greater risk than males with family problems. Alcohol use increased the risk of mortality for individuals who received only verbal instructions without a written action plan.

2. **"I thought the longer-acting medication would help reduce the need for repeat treatments."** Clinical studies of long-acting beta agonists compared to placebo in asthma patients using variable doses of inhaled corticosteroids have raised the issue of mortality risk in patients with asthma who are taking regular longacting beta agonists. Long-acting beta agonists added to inhaled corticosteroids reduces asthma-related hospitalizations compared to inhaled corticosteroids alone, and there is no statistical increase in mortality. However, longacting beta agonist treatment without inhaled corticosteroids does increase mortality risk in asthma. Healthcare providers must understand the essential need for adequate dosing of inhale

3. **"The patient didn't have any questions, so I didn't think she really wanted to hear all the intricate details."** Prescription of steroids in the treatment of acute asthma can lead to the following complications: avascular necrosis, mood changes, visual complaints, and infection. A provider treating patients with steroids must be diligent in explaining the potential side effects of steroids. The informed consent process, documentation, and close monitoring of patients are critical to avoid potential litigation.

4. **"I was concerned about the fetal side effects and figured that short-acting beta agonist therapy was sufficient."** Maternal asthma is associated with an increased risk of spontaneous abortion. Standard medical treatment of acute asthma does not increase the risk of congenital anomalies in the offspring when taken during the first trimester of pregnancy.

5. **"I thought I would see how the patient responded to standard therapies before starting noninvasive positive-pressure ventilation."** Noninvasive ventilation (NIV) has been shown to be effective in a wide variety of clinical settings; however, reports of NIV in asthma patients are scarce. There are a few prospective clinical trials reporting promising results in favor of the use of NIV in a severe asthma attack. A trial of NIV prior to invasive mechanical ventilation seems acceptable and may benefit patients by decreasing the need for intubation and by supporting pharmaceutical treatments. Although selecting the appropriate patients for NIV use is a key factor in successful NIV application, how to distinguish such patients is still quite controversial. If this technology is going to be employed, reaching for it early will likely yield more benefit.

6. **"I knew the patient was sick, but ETCO2 seemed sufficient."** In adult asthma patients with acute exacerbations, concordance between ETCO2 measured by capnography and PaCO2 measured by blood gas is high. However, capnography is not a replacement of blood gas as an accurate means of assessing alveolar ventilation in acute asthma.

7. **"We had trouble getting IV access, so I thought the nebulized therapy would suffice."** The use of IV magnesium sulfate (in addition to beta agonists and systemic steroids) in the treatment of acute asthma improves pulmonary function and reduces the number of hospital admissions for children; it only improves pulmonary function for adults. Though the use of nebulized magnesium sulfate appears to produce benefits for adults, the routine use of this form of magnesium sulfate should not be considered standard of care at this point.

8. **"Steroids from the discharge pharmacy seemed much easier."** Early administration of steroid therapy is essential. Current literature suggests that early administration decreases hospitalization rates and bounce-back rates. When treating for acute exacerbations, steroid therapy should be administered early.

9. **"PEF rate values were improved, so discharge seemed appropriate."** Proper triage of acute exacerbations must be based on complete clinical and psychosocial factors as a package. There is no single clinical factor that can be relied upon for triaging. Additionally, lack of historical risk factors does not equal lack of morbidity and mortality risk.

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10. **"It seemed that if we could have held off a little bit longer, the patient's course would turn around."** When intubation is clinically indicated, the emergency clinician should proceed without delay. Waiting to intubate when intubation is clinically indicated will lead to increased likelihood of procedural complications and respiratory arrest. We recommend that only the most experienced provider perform the procedure, given the increased need for firstpass success.

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