Using the Evidence: Pain Management in Liver Biopsy

The Problem

In the United States, radiologists perform a third to a half of all percutaneous liver biopsies. The incidence of pain is well documented with greater than 50% of patients experiencing pain during or after biopsy and 20% experiencing severe pain. Despite this, there is a paucity of literature describing best practices for pain management. Great variation exists in pain medication regimen for outpatient liver biopsies.

Aim/Goal

- > Describe current pain medication strategies and associated pain severity.
- Implement a standardized pain medication regimen for patients undergoing percutaneous liver biopsy.
- Complete a follow-up survey to document standardization of care and reduction in pain.

The Team

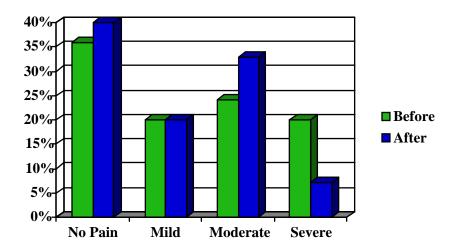
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- Day Care Nursing Staff: Annmarie Cathcart, RN, Martha Foote, RN, Michelle Geraghty, RN, Chris Mccusker, RN
- Robert Kane, MD, Radiology

The Interventions

- Pain management survey completed on 48 consecutive patients undergoing outpatient percutaneous liver biopsies in Ultrasound and the Day Care Unit
- Pain medication administration, pain severity and incidence of nausea and vomiting were documented pre-procedure, intra-procedure and post-procedure
- > Survey revealed variation in medication administration and patient response
- Extensive literature search conducted to evaluate best practice for medicating these patients
- Based upon the results of the survey and literature review, a new guideline was created and implemented
- > The change in practice was evaluated by a follow-up survey showing better standardization of care and significant improvement in pain management.

The Results/Progress to Date

Pain Levels Before and After Standardization of Pain Medication



- > This chart shows patients' pain at its worst pre and post procedure.
- There is a decrease in severe pain from 20% to 7%.
- > 40% of patients had no pain or mild pain following standardization of pain medication.

Lessons Learned

- > Standardized medication plan reduces chance of error.
- Patients' pain is well managed being medicated with Dilaudid pre-procedure with 60% of patient have no or mild pain at its worse.
- Patients appreciate the option of having moderate sedation.
- Patients receiving moderate sedation often require longer acting pain medication post-procedure.

Next Steps/What Should Happen Next

- Work to reduce incidence of severe pain following liver biopsies
- Document the increasing frequency in requests for moderate sedation



