

Welcome to Our New Pediatrics Section

The growing readership of HOSPITALIST NEWS now includes a substantial proportion of pediatric hospitalists, so we're expanding our coverage of inpatient pediatric topics and including a regular section of pediatrics in each issue. We look forward to bringing you continuing coverage of pediatrics in the months ahead.

CT Scans Pose Risks for Pediatric Trauma Patients

BY DENISE NAPOLI

BALTIMORE — CT scans are responsible for 91% of total radiation exposure in pediatric trauma patients, even though only 32% of imaging done in these patients is computed tomography, study results showed.

"If a patient is critical and the imaging study means the difference between life and death, then by all means get [the CT scan]. But there are times when imaging studies are done out of convenience or in place of other imaging modalities [like ultrasound] that could get pictures that are similar without radiation exposure," said Dr. Marissa A. Brunetti, who is an intensivist at Johns Hopkins Hospital, Baltimore.

In a presentation at the annual meeting of the Pediatric Academic Societies, Dr. Brunetti reported on 729 patients aged 14 years and younger seen in the emergency department at her hospital over a 1-year period. Transfer patients were excluded from the analysis, as were any follow-up imaging studies. In total, 1,457 CT studies and 4,603 radiographic studies were conducted on these patients.

The average radiation dose for each patient was 12.8 millisieverts (mSv), with a high of 73.5 mSv. "The average dose

from the environment is about 3 mSv per year, so that's more than four times the annual dose," Dr. Brunetti said.

Stratified by type of injury, the 178 patients whose trauma resulted from a motor vehicle accident received the greatest radiation exposure, with an average of 18.6 mSv. Pedestrians struck by cars had the second highest level, at 15.6 mSv.

Part of the reason unnecessary imaging studies are done, she said, is that "pediatricians and providers don't know the doses that these images impart." Education about which studies deliver the highest doses, and emphasis on keeping these studies to a minimum, could lower patients' total radiation exposure.

Another problem lies with transfer patients. Although the study did not look at transfers to the hospital, an audience member pointed out that "there is this idea that my CT scanner is going to be better than the CT that is done in the community hospital," so patients wind up having studies repeated.

"Especially in the very young with long time horizons, the benefit of additional radiation exposure for diagnostic purposes should be weighed against the long-term risks of additional exposure," Dr. Brunetti concluded. She had no disclosures in regard to this study. ■

Obesity Overlooked in Hospitalized Children

BY PATRICE WENDLING

CHICAGO — Not quite half of 785 hospitalized pediatric patients were overweight or obese, and psychiatric diagnoses affected almost a quarter of those children and teens, according to a chart review.

Overall, 102 (13%) children were overweight based on a body mass index percentage of 85%-95%, and another 227 (29%) were obese based on a BMI percentage greater than 95%, for a total of 42%, Dr. Marsha Medows and her associates reported in a poster at the annual meeting of the Society of Hospital Medicine.

Obesity was recognized as a diagnosis or problem in only 23% of the 227 obese children.

Failure to diagnose obesity and overweight in children represents an important missed opportunity to intervene, according to the investigators. Childhood obesity confers a substantial risk of adult obesity, lifelong health risks, and social and economic disadvantages.

Providers might not diagnose, counsel, or treat their obese patients because of concerns related to societal stigma and effectiveness of treatment, Dr. Medows of the department of pediatrics at New York University Langone Medical Center said in an interview.

"The social stigma is real, but so are the threats to health status that obesity poses," she said. "Providers, recognizing

this negative view of obesity, need to be empathic in their discussions regarding weight management."

Psychiatric illness was significantly more common in obese/overweight children (24%), compared with those without a weight problem (7%). There were no differences in diagnoses of respiratory illness, skin and soft-tissue infections, or diabetes.

"Obese children are at significantly higher risk for experiencing poor psychological well-being," Dr. Medows said. "Many studies have not determined if depression is a consequence of obesity or if depression predisposes to obesity. Bipolar disorder and schizophrenia are independent risk factors for obesity."

The medical center is in the process of changing its computer system to automatically flag overweight/obese BMI and place these patients on the problem list. When obesity was recognized as a problem in the study, the primary care physician was contacted regarding referral of the patient to the obesity clinic.

The chart review included children (60% male), aged 6 months to 18 years (mean, 8.5 years), who were hospitalized during a 15-month period at an urban community hospital. Diabetes was present in 1.4% of patients, but the prevalence was not different between those with or without a weight problem.

The investigators reported no conflicts of interest. ■

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Combination Tops Ketamine Alone for Pediatric Sedation

BY BRUCE JANCIN

NEW ORLEANS — The combination of ketamine and propofol for pediatric procedural sedation in the emergency department results in less total sedation time, faster recovery, dramatically fewer side effects, and higher satisfaction scores than does the use of ketamine alone, according to a randomized, double-blind clinical trial.

"We feel that this study has a strong potential to change clinical practice in a meaningful way," Dr. Amit P. Shah said at the annual meeting of the Society for Academic Emergency Medicine.

Ketamine continues to be the most widely used first-line agent for pediatric procedural sedation in emergency departments (EDs), although propofol is gaining in popularity.

But there are sound theoretical reasons to believe the two agents have synergistic benefits; for example, ketamine is an emetic, while propofol has been shown to have antiemetic properties.

For this reason, Dr. Shah and his coin-

vestigators at Children's Hospital of Western Ontario, London, organized a trial to compare ketamine plus propofol with ketamine alone.

Using dedicated research assistants and predetermined end points for sedation and recovery, the investigators studied



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DR. SHAH

136 patients aged 2-17 years who presented to the hospital for treatment of an isolated orthopedic extremity injury requiring procedural sedation.

Participants randomized to ketamine received an initial dose of 1.0 mg/kg given over 30 seconds plus a placebo consisting of intravenous Intralipid, followed by ketamine at 0.5 mg/kg and placebo

every 2 minutes as required to reach a predetermined sedation score. Patients assigned to ketamine/propofol received an initial dose of ketamine at 0.5 mg/kg and propofol at 0.5 mg/kg, followed by propofol at 0.5 mg/kg and saline placebo every 2 minutes as needed for sedation.

The primary study end point was total sedation time, defined as the lapsed time from the first sedative injection to a score of 8 or more on the Modified Aldrete Recovery Scale. Total sedation time averaged 15.2 minutes in the ketamine/propofol group, significantly less than the 18.7 minutes for ketamine alone. Mean recovery time also was significantly faster with combined sedation: 11.4 minutes versus 15.6 minutes with ketamine alone.

But the most impressive finding was the striking difference in side effects, according to Dr. Shah. A total of 36% of ketamine-treated patients versus just 12% of those who got ketamine plus propofol experienced side effects. The major differences between the two regimens were in the domains of nausea or vomiting, which was experienced by 16%

of the ketamine group and just 3% of patients on ketamine/propofol; agitation or hallucinations, which were reported by 13% of the ketamine group, compared with 6% of the ketamine/propofol group; and pain upon injection, which occurred in 2.9% of the ketamine group but did not occur in anyone given the combined sedation.

Patients, physicians, and nurses all rated their satisfaction with sedation significantly higher on a 7-point scale with ketamine/propofol than with ketamine alone.

The incidence of respiratory adverse events was similar in both treatment groups. All respiratory complications were mild and were managed with oxygen or airway repositioning.

In contrast, a recent meta-analysis suggests that the use of ketamine in combination with benzodiazepines results in slower recovery and more respiratory adverse events than occur with ketamine alone, according to Dr. Shah.

The trial received funding from several Canadian nonprofit agencies. ■