

associated with improved symptomatology, functional outcomes, and knowledge compared to a paper handout. **Methods:** We conducted a randomized controlled superiority trial comparing video discharge instructions (Easy Sketch Pro3™) on management of pain to a paper handout detailing the same. We included caregivers of children 6 months to 5 years presenting to the emergency department (ED) with a clinical diagnosis of AOM. The primary outcome was symptomatology using the Acute Otitis Media Severity of Symptom (AOM-SOS) score between 48 and 72 hours. The 7-item self-report AOM-SOS is scored from 0 to 13 with a higher score indicating more symptomatology. Secondary outcomes included knowledge gain using a 10-item survey, days of daycare/school/work missed, and recidivism. Assuming a minimal clinically important AOM-SOS difference of 2, 90% power, and 5% alpha, 60 individuals/group was needed. **Results:** 219 caregivers were randomized and 149 completed the 72-hour follow-up (72 paper and 77 video). The median (IQR) AOM-SOS score in the video group (adjusted for pre-intervention AOM-SOS, analgesic and antibiotic use) was significantly lower than paper [8 (7,11) versus 10 (7,13), respectively, $p=0.004$]. There were no significant differences between video and paper in the mean (SD) knowledge score [9.2 (1.3) versus 8.8 (1.8) correct answers, respectively, $p=0.07$], mean (SD) number that returned to a health provider [8/77 versus 10/72, respectively, $p=0.49$], mean (SD) number of daycare/schooldays missed [1.2 (1.5) versus 1.1 (2.1), respectively, $p=0.62$], and mean (SD) number of workdays missed by caregiver [0.5 (1) versus 0.8 (2), respectively, $p=0.05$]. **Conclusion:** Video discharge instructions are associated with less symptomatology compared to a paper handout, are effective for caregiver education in the ED, and should be used routinely.

Keywords: otitis media, education, pain

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Epidemiologic trends in substance and opioid misuse in Alberta: a cross-sectional, time-series analysis

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Introduction: Substance and opioid misuse are growing public health concerns in Canada. Substance use disorders affect 21.6% of Canadians and accounted for \$267 million in healthcare costs in 2011. Opioid misuse is a current public health crisis. The extent of the rise in substance and opioid misuse-related Emergency Department (ED) visits in Canada and the demographic groups in which the rise is concentrated have not been elaborated. Alberta has one of the most complete provincial ED visit records and provides an important understanding of national trends. The objective of this study was to evaluate trends in substance and opioid misuse-related ED visits in Alberta from 2010/11 to 2014/5 within demographic cross-sections of the population using administrative ED visit data from the National Ambulatory Care Reporting System (NACRS). **Methods:** All visits made by adult patients (18 years old) to any of more than 100 Albertan EDs for a substance misuse-related presentation between 2010/11 and 2014/15 were analyzed. Visits were classified as being related to substance or opioid misuse if the primary and/or secondary visit diagnoses were among an a priori determined group of ICD-10 codes. Annual substance misuse-related visits were compared as visits per 100,000 adult population in Alberta to standardize for population growth. Linear regression was used to assess whether ED visits increased significantly over time. A cross-sectional time-series analysis was employed to

examine trends within subgroups defined by sex and age categories (18-29, 30-39, 40-49, 50-59, and 60 years) over a 60-month period. **Results:** 149,719 substance misuse-related visits were made by 65,089 patients and 8768 opioid misuse-related visits were made by 5763 patients. From 2010/11 to 2014/15, substance misuse-related ED visits in Alberta increased by 38% from 811 to 1,119 visits per 100,000 population. Opioid misuse-related ED visits increased significantly (64%) from 44 to 72 per 100,000 population. Conversely, total ED visits per 100,000 population did not increase significantly. Substance and opioid misuse-related visits rose more in non-rural than rural areas. Cross-sectional time-series analysis showed that the greatest increase in substance and opioid misuse-related ED visits occurred in males and in the 18-29 year age category, in which visit increases for opioid misuse appeared exponential. **Conclusion:** Substance and opioid misuse-related ED visits increased significantly from 2010/11 to 2014/15 in Alberta, with the most dramatic increases occurring in young patients and males. These findings have important implications for targeting urgent preventative public health interventions to stem the rise of this epidemic.

Keywords: substance-related disorders, opioid-related disorders, public health

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Relationship between pain, opioid treatment, and delirium in emergency department elderly patients

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Introduction: Emergency department (ED) stay and its associated conditions (immobility, inadequate hydration and nutrition, lack of stimulation) favor the development of delirium in vulnerable elderly patients. Poorly controlled pain, and paradoxically opioid pain treatment, has also been identified as a trigger for delirium. The aim of this study was to assess the relationship between pain, opioid treatment, and delirium in elderly ED patients. **Methods:** A multicenter prospective cohort study was conducted in four hospitals across the province of Québec (Canada). Patients aged 65 years old, waiting for care unit admission between February and May 2016, who were non-delirious upon ED arrival, independent or semi-independent for their activities of daily living, and had an ED stay of at least 8 hours were included. Delirium assessments were made twice a day for their entire ED stay and for the first 24 hours in the hospital ward using the Confusion Assessment Method (CAM). Pain intensity was evaluated using a visual analog scale (0-100) during the initial interview, and all opioid treatments were documented. **Results:** A total of 338 patients were included; 51% were female, mean age was 77 years (SD: 8). Forty-one patients (12%) experienced delirium during their hospital stay occurring within a mean delay of 47 hours (SD: 19) after ED admission. Among patients with pain intensity 60, 22% experienced delirium compared to 10.7% for patients with pain <60 ($p<0.05$). No significant association was found between opioid consumption and delirium ($p=0.22$). Logistic regression controlling for age, sex, ED stay duration, and opioids intake showed that patients with pain intensity 60 are 2.6 (95% CI: 1.2-5.9) more likely to develop delirium than patients who had pain <60. **Conclusion:** Severe pain, not opioids, is associated with the development of delirium during ED stay. Adequate pain control during the hospital stay may contribute to the decrease of delirium episodes.

Keywords: delirium, opioids, pain