

outcome was ED revisit rate. **Results:** Overall, 1168 (37.9%) of 3081 eligible patients underwent early intervention. Patients with small stones <5mm experienced more treatment failures (31.5% v. 9.9%) and more ED revisits (38.5% v. 19.7%) with early intervention than with spontaneous passage. Patients with large stones  $\geq 7.0$ mm experienced fewer treatment failures (34.7% v. 58.6%) and similar ED revisit rates with early intervention. Patients with intermediate-sized 5.0–6.9mm stones had fewer treatment failures with intervention (37.4% v. 55.5%), but only if stones were in the proximal or middle ureter. **Conclusion:** This study clarifies stone characteristics that identify patients likely to benefit from early intervention. We recommend low-risk patients with uncomplicated stones <5mm generally undergo initial trial of spontaneous passage, while high-risk patients with proximal or middle stones >5mm, or any stone >7mm, be offered early intervention.

**Keywords:** intervention, outcomes, renal colic

### LO25

#### Use of Glasgow Blatchford Score, time to endoscopy, and proton pump inhibitor use in patients presenting with upper gastrointestinal bleeding to the emergency department

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**Introduction:** Upper gastrointestinal bleeding (UGIB) is a common presentation to the emergency department (ED). Early endoscopy within 24 hours has been shown to reduce re-bleeding rates and lower mortality. However, low-risk patients can often be managed through outpatient follow-up. The aim of this study was to compare the timing and appropriateness of endoscopy and proton pump inhibitor (PPI) use in a tertiary care ED setting for low- and high-risk patients determined using the Glasgow Blatchford Score (GBS). **Methods:** Retrospective chart review was conducted to examine the management of patients presenting with an UGIB in 2016 to the University of Alberta Hospital ED. TANDEM and Emergency Department Information System (EDIS) databases were used to identify patients using specific ICD-10 codes and the CEDIS presenting complaints of vomiting blood or blood in stool/melena. Patients with GBS 0–3 were categorized as low-risk and those with GBS > 3 were considered high-risk with appropriateness of and time to endoscopy, disposition of patient at 24 hours, and use of PPIs determined for each group. **Results:** A total of 400 patients were included. A total of 319/400 patients (80%) underwent esophagogastroduodenoscopy (EGD). EGD was performed within 24 hours in 37% of patients (29/78) with GBS 0 to 3 and in 77% (248/322) with GBS greater than 3. Of the remaining high-risk patients, 11% (36/322) underwent EGD after 24 hours and 12% (38/322) did not undergo EGD. The endoscopic diagnoses were peptic ulcer disease (PUD) in 41% of patients (130/319), esophagitis in 18% (56/319), and varices in 14% (45/319). PPIs (data available 375/400) were administered (mainly intravenously) to 93% (279/300) of high-risk and 79% (59/75) of low-risk patients. Data on patient disposition showed 60/322 (19%) high-risk patients were discharged from the ED within 24 hours and only 31/60 (52%) of these underwent EGD before discharge. Of 29 low-risk patients undergoing EGD within 24 hours, 9 (31%) were admitted, 17 (59%) were discharged from ED, and 3 (10%) were kept for observation in the ED greater than 24 hours. Of low-risk patients, 76% (59/78) were discharged from the ED within 24 hours. **Conclusion:** A majority of patients presenting with UGIB

appropriately received endoscopy within 24 hours. 19% of high-risk patients were discharged from the ED. Earlier discharge for low-risk patients can be improved as only 76% of low-risk patients were discharged from the ED within 24 hours. As expected, PPI use was high in these patients.

**Keywords:** endoscopy, gastrointestinal bleeding, management

### LO26

#### Are ED physicians contributing to the opioid epidemic?

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**Introduction:** There is an opioid epidemic which has seen an increased mortality rate of 200% related to opioid use over the past decade. Prescription practices amongst ED physicians may be contributing to this problem. Our objective was to analyze ED physician prescription practices for patients discharged from the ED with acute fractures. **Methods:** We conducted a health records review of ED patients seen at two campuses of a tertiary care hospital with total annual census of 160,000 visits. We evaluated a consecutive sample of patients with acute fractures (January 1 2016–April 15 2016) seen and discharged by ED physicians. Patients admitted to hospital or discharged by consultant services were excluded. The primary outcome measure was the proportion of patients discharged with an opioid prescription. We collected data using a screening list, review of electronic records, and interobserver agreement for measures. We calculated simple descriptive statistics and estimated 4 months would be required to enroll 250 patients receiving opioid prescriptions. **Results:** We enrolled 816 patients, with 442 females (54.2%), median CTAS score of 3, and median pain score at triage of 6/10. The most common fractures were wrist/hand (35.2%) and foot excluding ankle (14.8%). An ED pain directive was used at triage for 21.2% and 281 patients (34.4%) received an opioid during ED stay, with tramadol (21.2%) being the most common. Overall, 250 patients (30.6%) were discharged with the following opioid prescriptions and median total dosages: hydromorphone (N = 114, median dosage 23mg, range 1–120mg), tramadol (N = 86, 1000mg, 200–2000mg), oxycodone (N = 33, 100mg, 10–170mg), codeine (N = 20, 600mg, 360–1200mg), and morphine (N = 9, 100mg, 25–200mg). Of patients prescribed hydromorphone, 61 (53.5%) were prescribed >20mg. Overall, 35 patients (4.3%) had a pain related ED visit <1 month after discharge, of which 14 (40%) received an opioid prescription on initial discharge, and 12 (34.2%) received an opioid prescription upon subsequent discharge. **Conclusion:** Amongst patients presenting to the ED with acute fractures, the majority were not discharged home with an opioid prescription from ED physicians. Hydromorphone was the most common opioid prescribed, with large variations in total dosage. Despite only a minority of patients receiving opioid prescriptions, there were very few return to ED visits. To limit potential abuse, we recommend standardization of opioid prescribing in the ED, with attention to limiting the total dosage given.

**Keywords:** analgesia, fractures, opioids

### LO27

#### Risk factors for misuse of prescribed opioids: a systematic review and meta-analysis

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**Introduction:** Increasing opioid prescribing has been linked to an epidemic of opioid misuse. Our objective was to synthesize available evidence about patient-, prescriber-, medication-, and system-level risk factors for developing opioid misuse from prescribed opioids among patients presenting with pain unrelated to cancer. Our hypothesis was that we would identify risk factors predisposing patients to developing opioid misuse. **Methods:** We developed a systematic search strategy and applied it to nine electronic reference databases and six clinical trial registries. We hand searched related journals and conference proceedings, the reference lists of included studies, and the top 100 hits on Google. We included studies where a medical professional exposed adults or children to an opioid through a prescription. We excluded studies with over 50% cancer patients, palliative patients, and those with illicit opioid initiation. Two reviewers independently reviewed titles, abstracts, and full texts, and extracted data using standardized forms. We assessed study quality using risk of bias. We synthesized effect sizes of dichotomous risk factors on opioid misuse using inverse variance random-effects meta-analysis, and the inverse variance-weighted mean difference between opioid misusers and non-misusers for continuously measured factors. We conducted an a priori defined subgroup analysis among opioid-naïve patients. **Results:** Among 9,629 studies, 67 met our inclusion criteria. Among those who had been prescribed outpatient opioids, the following factors were associated with the development of misuse: a prior history of illicit drug use (OR: 4.21, 95% CI: 2.31-7.65), recent benzodiazepine use (OR: 2.57, 95% CI: 1.23-5.38), any mental health diagnosis (OR: 2.45, 95% CI: 1.91-3.15), any short acting (IR) opioid prescription (OR: 2.40, 95% CI: 1.15-5.02), younger age (OR: 2.19, 95% CI: 1.81-2.64), and male sex (OR: 1.23, 95% CI: 1.10-1.36). Among studies limiting their population to opioid-naïve patients, younger age was the most significant risk factor for opioid misuse (OR: 5.42, 95% CI: 1.51-19.43). **Conclusion:** Of the risk factors examined, non-cancer pain patients with a prior history of substance use or mental health diagnoses were at highest risk for prescription opioid misuse. Younger opioid-naïve patients were at highest risk of misuse. Clinicians should consider these risk factors when managing acute pain in the emergency department.

**Keywords:** medication safety, opioid misuse, opioid prescribing

#### LO28

##### **Emergency department gastrointestinal presentations related to marijuana ingestion: a single centre retrospective study**

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**Introduction:** Cannabis Hyperemesis Syndrome (CHS) is a poorly understood phenomenon with a subset of patients presenting to the emergency department (ED) for symptomatic control of refractory nausea and vomiting. As legalization of marijuana commenced on October 2018, it is important to recognize the presentation of patients related to marijuana consumption. The objective of this study was to describe demographic and ED visit data of patients presenting to the ED with cannabis-related sequelae. **Methods:** This was a health records review of patients  $\geq 18$  years presenting to one of two tertiary care EDs (annual census 150,000 visits) with a discharge diagnosis including cannabis use with one of abdominal pain or nausea/vomiting using ICD-10 codes. Trained research personnel collected data from medical records including demographics, clinical history, results of investigations within the ED. Descriptive statistics including means and standard deviations are presented where appropriate. **Results:**

From April 2014 to June 2016, 203 unique ED patients had a discharge diagnosis including cannabis use with abdominal pain or nausea/vomiting. Mean (SD) age was 30 (13.04) years and 120 (59.1%) were male. Patients presented to the ED independently 84 (41.4%), via EMS with 104 (51.23%) and 15 (7.39%) by police. The majority of patients were triaged as CTAS-2 in 27 (33%) and CTAS-3 in 106 (52.2%) of all cases. Of patients disclosing their method of consumption, 31 (15.3%) had used combustion methods and 30 (14.8%) had edible marijuana. Mean (SD) serum potassium was 3.71 (0.48) mmol/l. 162 (79.8%) were discharged home and 9 (4.4%) were given follow up (all psychiatric). Twenty-nine (14.3%) were admitted to hospital with 28 (13.8%) admitted to psychiatry and 1 (0.5%) admitted to medicine. **Conclusion:** This ED-based retrospective chart review reports a description of cannabis-related presentations to the ED. Clinicians should be aware of CHS in patients presenting to the ED, especially as Canada enters the era of legalization. Future research should focus on the impact of federal legalization of marijuana on ED utilization for CHS-related presentations.

**Keywords:** cannabis, emergency, marijuana

#### LO29

##### **Unexplained variation in 'to-go' opioid prescribing across emergency departments in a large Canadian cohort**

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**Introduction:** Emergency Department (ED) opioid prescribing has been linked to long-term use and dependence. Small packets of opioid medications are sometimes prescribed at discharge, i.e. 'To-Go', in an attempt to treat pain but avoid unintended consequences. The extent of this practice and its associated risks are not fully understood. This study's objective was to describe the use of 'To-Go' opioids in a large urban center. **Methods:** Multicenter linked administrative databases were used to recruit an observational cohort. The referral population was comprised of all patients discharged from a Calgary ED in 2016 (four hospitals) with an arrival pain score greater than 0. We first described this population and then performed a multivariable analysis to assess for predictors of 'To-Go' opioids. 'To-Go' opioids were either Tylenol-Codeine or Tylenol-Oxycodone. **Results:** A total of 88,855 patients were recruited. The majority were female (57%) and the average age was 44.5 yrs. Abdominal pain was the most frequent complaint (22.1%) followed by extremity (18.3%) and cardiac pain (8.0%). Overall, 2,736 patients (3.1%) received an opioid 'To-Go' with significant variation in prescribing rates across hospitals (1.8-5%  $\chi^2 p < 0.05$ ). Logistic regression (covariates: age, sex, CTAS, pain score, type of pain, hospital, ED opioid, length of stay) revealed that receiving an opioid (IV or PO) prior to discharge was the strongest predictor of 'To-Go' opioid (OR 6.4 [5.9-7.0]). Hospital (OR 1.4 [1.3-1.4]) and male sex (OR 1.2 [1.1-1.3]) also emerged as predictors, whereas age over 65 decreased the odds of 'To-Go' opioid (OR 0.8 [0.6-0.9]). Hospital-specific ORs ranged from 1.3-2.7. **Conclusion:** In comparable patient populations some hospitals are more likely than others to provide a short course of opioids at discharge. This difference is not explained by patient demographics, pain profiles, or medications prior to discharge. The reasons for this variation are unclear but it underscores the need to determine the risks of ED opioid exposures and develop clear evidence-based prescribing guidelines.

**Keywords:** opioids, pain, 'to-go'