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(168) The risk of opioid overdose among patients receiving higher versus lower doses of extended-release opioids in the UK

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Four papers reported 3- to 11-fold increased risk of opioid overdose among US patients prescribed ≥120mg versus ≤30mg daily morphine equivalent dosage (MED). However, the studies were potentially biased by 1) differences in indications, formulations and opioid substances among patients receiving high versus low opioid doses, since studies pooled all opioids, and 2) opioid abuse, since abusers prefer higher doses and abuse is under-ascertained in claims databases. The objective here was to reassess opioid dose-overdose risk addressing these biases, separately within three extended-release (ER) opioids: ER morphine tablets, fentanyl patch and buprenorphine patch. To minimize the impact of abuse, we used a UK medical record database maintained by general practitioners, who control access to healthcare and have long-term relationships with patients. Person-time on opioids by dose was calculated. Overdoses were ascertained from diagnostic codes. Poisson regression was used to calculate relative risks of overdose by dose controlling for age, gender, cancer, mental illness, and rescue opioids. Between 2005 and 2010, 38,861 patients (287 overdoses) were prescribed ER morphine, 23,909 fentanyl patches (108 overdoses), and 20,560 buprenorphine patches (56 overdoses). The relative risk of overdose among patients prescribed ≥120mg versus ≤30mg MED was 1.44 (95% CI: 1.04-1.99) for morphine, 1.51 (95% CI: 0.59-3.86) for fentanyl patch, 0.78 (95% CI: 0.36-1.72) for buprenorphine, and 1.18 (95% CI: 0.90–1.55) for all three opioids combined. The risk of opioid overdose among UK patients prescribed ≥120mg versus ≤30mg MED was not increased for buprenorphine patches, and the increase for morphine and fentanyl patches was lower than in published studies. The risk of overdose at higher opioid doses may be inaccurately increased in claims analyses of US patients that pool all opioids and don't control for abuse by non-patients.

(169) Predictors of pain expectation among adult outpatients with sickle cell disease

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Expectations about pain influence postoperative and cancer pain, but has not been studied among adults with sickle cell disease (SCD). We determined the predictors of pain expectation from current and past pain variables reported by outpatients with SCD. During a routine outpatient clinic visit, 218 adults (18-74 years; 61% female; 98% African American; 73% SS, 18% SC, and 9% other genotype) completed PAINReportIt, a computerized McGill Pain Questionnaire plus items for pain expectation and goals, satisfaction with pain level, pain endured without medication, pain relief with past treatments, tendency to tell/not tell others about pain, current, least and worst pain intensity (averaged), worst common pain intensity, and amount of time during the past 24 hours that pain intensity was greater than tolerable. The average pain intensity was 4.5±2.9. Pain was better than expected for 44%, the same as expected for 46%, and worse than expected for 10%. Based on this distribution, we used two binary logistic regressions, one for the probability of pain not worse than expected, and one for the probability of pain better than expected. The chance of a patient considering pain to be worse than expected was significantly associated with patient gender (Est = -1.09, Z = -1.99, p<.05) and pain intensity (Est = -0.47, Z = -3.5, p<.001). No predictor, however, had a significant association with the chance of a patient considering pain to be better than expected. Among adults with SCD whose pain is often unpredictable, pain goals, past pain experiences, time with intolerable pain, and satisfaction were not associated with pain expectation. Patients with more intense average pain and men were more likely to report their pain was worse than they expected. Additional qualitative research is needed to better clarify the concept of pain expectation among adults with SCD.

(170) Determinants of time to opioid cessation post-surgery

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Various elements may contribute to a patient's time to opioid cessation post-surgery. We investigated this in an ongoing study comparing the effects of gabapentin versus placebo given before and after surgery. This study follows participants undergoing mastectomy, lumpectomy, thoracotomy, knee replacement, hip replacement, or video-assisted thoracoscopic surgery. We hypothesized that opioid use and depression before surgery would increase the time until opioid cessation. Prior to surgery, participants completed a baseline questionnaire assessing psychological state and opioid use. Following surgery, we collected daily data on opioid consumption and pain from participants via phone assessment until opioid cessation, surgical pain cessation, and full recovery from surgery. Thus far, we have analyzed seven characteristics with regard to opioid cessation in 121 participants. Of these, gender, preoperative opioid use, and depressive symptoms had a statistically significant correlation (p<0.05). In a multivariate analysis, participants scoring in the 75th percentile of the Beck Depression Inventory II (BDI-II) had a 74% (95% CI 0.55-0.98; P=0.03) reduction in the rate of opioid cessation following surgery compared to the 25th percentile, and preoperative opioid use was associated with a 61% (95% CI 0.20-0.78; p=0.002) reduction in the rate of opioid cessation. Gender was no longer significant (p=0.09); however, this may demonstrate that gender is correlated with BDI-II score or previous opioid use. These results are in agreement with the results from Carroll, et. al.'s study[1] and show that preoperative factors, particularly depressive symptoms and opioid use before surgery, are indicative of time to opioid cessation after surgery. Further analysis of this subject could improve our understanding of chronic opioid use and guide post-surgical pain prescription practices. (1. Carroll, Ian, et. al., A Pilot Cohort Study of the Determinants of Longitudinal Opioid Use After Surgery, 2012.)

(171) Community characteristics and chronic pain: pain is bigger than one's self

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Many studies have been conducted to identify a variety of individual factors that may contribute to the experience of chronic pain. Yet, substantially less research has addressed the contributions of larger community and environmental factors on the prevalence and severity of chronic pain. This study examines social environmental characteristics including one's community's population density, poverty rate, average education levels, and area ethnic diversity as correlates of pain prevalence and severity. The data for this study were collected through a computer-assisted telephone interview to obtain a representative sample in the state of Michigan (n = 1,179). The overall prevalence of chronic pain attributed to any cause was 21.9%. In this study, county, city, and zip code levels of analysis were used in logistic analyses to identify the various levels of community that are associated with chronic pain prevalence. In addition, multiple regression analyses were used to examine the association between community variables and pain severity among those with chronic pain. The findings from this study provide information about how individuals with chronic pain are impacted by certain types of community factors. Results may be helpful in targeting at risk groups and conducting public health education and prevention campaigns in communities most at risk for chronic pain.