(196) Symptom control in underserved Chinese American cancer patients: a community-based quality improvement intervention

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Chinese Americans have high cancer rates and many are recent immigrants who are medically underserved. Patients have an elevated risk for poorly controlled pain. While quality improvement (QI) methodologies may improve practice and patient-reported outcomes, few QI programs exist for this population. The aims are to: (1) test the effectiveness of a rapid-cycle QI intervention to enhance the processes and outcomes of pain management for poor and underserved ethnic Chinese cancer patients; (2) determine whether a rapid-cycle QI intervention for pain can be generalized to other symptoms (fatigue; dyspnea); and (3) identify demographic, cultural, psychological, and other barriers and facilitators that are related to intervention uptake. In this ongoing community study, we are developing and testing a rapid-cycle QI model to improve pain among Chinese American cancer patients, and evaluating factors that influence its uptake and sustainability. Ethnic Chinese cancer patients and clinicians from four large community oncology practices are the intervention targets. The systems-based intervention, which applies rapid-cycle QI methods in collaboration with the oncology practices, includes: pain screening, follow-up for early identification and treatment of pain, referral, and clinician education. Post-implementation, a review of pain screening forms demonstrated that 23% of 650 patients screened over 150 days had moderate or severe pain. Of those with moderate pain, 42% received follow-up appointments within 1 week and 98% with severe pain had immediate clinician attention. Intervention effectiveness will be determined by 2-week longitudinal surveys. The primary outcome is the change over time in the proportion of patients who achieve adequate and timely pain control after initial presentation. These data demonstrate that a community-based QI program for cancer pain can be implemented in Chinese Americans. Future results may show the importance of community-based QI interventions in reducing pain disparities among underserved populations and producing long-term changes in clinical pain management.

(197) Analysis of guidelines for chronic, non-cancer pain management with opioid analgesics

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A structured review of recent North American government and professional society pain management guidelines was conducted to identify common themes and the degree of agreement. Guidelines focusing on specific diseases or pain mechanisms were excluded. Ten were chosen as a representative sample and thoroughly explored to develop a consolidated content list. Each element was coded as: recommended (explicitly or implicitly), optional, not recommended, or not addressed. The 2010 VA/DoD guideline, done without industry support, is detailed and comprehensive and addressed almost all content identified. Across guidelines, a high degree of concordance was noted on parameters such as initial patient evaluation and periodic re-evaluation, substance use history, specified goals, specialist consultations, and record keeping. Varying guidance was given regarding initiation and ongoing treatment with short-acting (SA) or long-acting (LA) opioid drugs and whether a specific morphine milligram equivalent (MME) dose should trigger an action such as a mandatory pain consultation. Several were silent on parameters such as checking a State PDMP for existing opioid prescriptions prior to initiation, treatment recommendations for special patient populations, or appropriate storage and disposal of opioid medications. Based on content convergence, a comprehensive guideline would address thorough assessment of both pain and function prior to initiating opioid therapy; use of validated tools in risk stratification; PDMP check prior to initiation; periodic re-evaluation of analgesia, function, adverse events, and aberrant behaviors; documentation of evaluations, plans, treatment decisions, and progress toward goals; and detailed guidance for initiating, titrating, and discontinuing opioid therapy. Our analysis suggests the need for better scientific evidence for: risk stratification outcomes, optimal uses of SA and LA opioid analgesics, best uses of other therapies, and whether MME trigger doses enhance individual and public health in clinically meaningful ways. Both authors are full-time employees of Purdue Pharma L.P.

(198) Exploratory factor analysis of the beck depression inventory: predictors of delayed opioid cessation after surgery in a pilot cohort study

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Previously, we conducted a pilot cohort study of patients scheduled to undergo 5 distinct surgical procedures. (1) Pre-operative elevated depressive symptoms (every 10 point increase on the Beck Depression Inventory II-BDI) were associated with a 47% (95%CI 24%-64%) reduction in the rate of opioid cessation following surgery ($p<0.0006$).[1] Pre-operative legitimate opioid use and pre-operative self-perceived susceptibility to addiction were also significant predictors.[1] In contrast, pain severity and pain duration did not predict delayed opioid cessation after surgery. The BDI is validated for use with chronic pain patients, but certain patients score higher on somatic vs. cognitive-affective components of the test increasing the overall score. Also, the BDI is most useful for assessing depressive symptoms of higher severity. As an initial step to understanding how mood perpetuates opioid use after surgery, we conducted an exploratory factor analysis of the pre-operative BDI score. We identified three main factors characterized as negative affect, self-loathing, and somatic symptoms. All factors were significantly associated with delayed opioid cessation in univariate Cox regression, but multivariate analysis revealed self-loathing as the only significant factor of the BDI predicting delayed opioid cessation. Although there was some overlap between negative affect and somatic symptoms, which may have limited our study findings, this analysis reinforces the association of pre-operative affective state with delayed opioid cessation after surgery. Of note, other studies have identified these cognitive components of self-loathing apart from somatic symptoms on the BDI as a useful measure of depression. Future research is needed to address the complex relationship between mood, opioid use, and pain through surgery and recovery. (1. Carroll I, Barelka P, Wang CK, Wang BM, Gillespie MJ, McCue R, et al. A Pilot Cohort Study of the Determinants of Longitudinal Opioid Use After Surgery. Anesth Analg. 2012. Epub 2012/06/26. http://dx.doi.org/10.1213/ANE.0b013e31825c049f. PubMed PMID: 22729963.)

(199) Association between subjective self-report of pain and the hemodynamic response to a prolonged noxious stimulus during cold water tolerance test: an fNIRS study

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Four tolerance tests using cold water at different temperatures were employed to investigate the hemodynamic response to different intensities of a cold noxious stimulus. Twenty one healthy right-handed individuals (20 to 35 years old) with no history of neurological, psychological, or psychiatric disorders and analgesic-free were recruited. Each experiment started with a 30 s baseline and a 2 min immersion of the right hand in the tepid water (~23C) for adaptation. This was immediately followed by the immersion of the same hand in a temperature-controlled cold water bath for as long as s/he can tolerate the stimulated pain but no longer than 5 min. The protocol was repeated for different bath temperatures of 15C, 10C, 5C, and 1C for all subjects. Oxyhemoglobin (HbO2) and deoxy-hemoglobin (Hb) concentration changes were continuously recorded using a functional Near Infrared Spectroscopy (fNIRS) device developed at Drexel University by means of three multi-distance probes located on the forearm and forehead. During each experiment, in addition to subjects' pain threshold and tolerance, numerical pain rating scores on a 0 to 10 scale (NRS-11) were recorded every 15 s. Results from the forehead probes suggested that: 1) as the temperature of cold water decreased, subjects' pain threshold and tolerance decreased; 2) the Hb and HbO2 data collected from 'far' (2.8 cm) and 'near' (1 cm) detectors followed a similar trend throughout the experiments; 3) during the initial arousal phase, the intensity of reported pain increased rapidly and so did the amplitude of HbO2 data; and 4) hemodynamic adaptation to a prolonged exposure to cold water was observed in all subjects; however, not all the subjects reported decreasing pain during the adaptation phase. This study suggests that fNIRS can be effectively used to monitor the generalized hemodynamic response to a cold water tolerance test.