



RESEARCH  
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TREATMENT  
ADVOCACY

#### (144) Chronic pain and prescription opioid use in rural bariatric surgery patients

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An estimated 100 million Americans experience chronic pain. Obesity is a risk factor for chronic pain and is also a major contributor to morbidity. Previous research has shown that for every point increase in BMI, there is an associated increase in the number of pain origins reported by patients. These pain origins are not limited to lower limb pain, but all types of pain measured. Bariatric surgery and the weight loss associated with the surgery have been associated with reductions in pain severity and disability, particularly knee and back pain. Therefore, bariatric surgery is sometimes viewed as a means of resolving pain in obese patients by reducing weight. The use of opioid medications to manage chronic non-cancer pain is a common practice, despite mixed support for the long-term effectiveness of this treatment. Despite the prevalence of chronic pain in obese patients, there is a dearth of research examining chronic pain and opioid use among patients presenting for bariatric surgery. The current study seeks to understand the pre-surgical prevalence of chronic pain and opioid use in 3483 patients who had bariatric surgery in a rural academic health center. Thirty percent of bariatric patients reported one or more chronic pain condition and 24.2% were prescribed opioids pre-surgically. Three percent had attended appointments with Interventional Pain Management within the health center. Patients with pain were more likely to be female ( $t=-3.42$ ,  $p<.001$ ), have higher BMI ( $t=5.55$ ,  $p<.00$ ), more likely to have a "Yellow" light status at first behavioral medicine appointment ( $t=2.72$ ,  $p<.01$ ). The likelihood of pain was not associated with age or ethnicity. The current study is the first to examine the prevalence of chronic pain and opioid use in patients presenting for bariatric surgery in a rural population. These findings are slightly different than those found in previous research in urban populations.

#### (145) The Musculoskeletal diagnosis cohort: examining pain and pain care in the VA

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The Veterans Health Administration (VHA) is the largest integrated healthcare system in the US, providing over 86 million outpatient and 694 thousand inpatient visits to nearly 6 million Veterans at 131 medical facilities in 2013. As in the general population, painful musculoskeletal disorders (MSD) are among the most prevalent and costly disorders treated in VHA. The Musculoskeletal Disorders cohort was created to characterize Veterans with MSD receiving VHA care, and examine variation in pain, treatment, effects of comorbidities, and outcomes by patient and facility characteristics over time. We describe the cohort construction and some key findings to date. We searched VHA administrative data between 01/01/2001 and 12/31/2013 to identify Veterans with ICD9 codes for diagnoses including osteoarthritis, low back pain, lupus, and TMJ. We required two or more outpatient visits occurring within 18 months or one inpatient visit with an MSD code. Patients were followed retro- and prospectively from cohort entry, the date of the first MSD diagnosis, allowing for longitudinal analyses. Comorbid conditions, treatments, pain numeric rating scale scores (NRS), mortality, and other clinical characteristics were collected. Periodic updates will be conducted. The sample comprises 4,122,458 Veterans with one or more MSD diagnoses. The mean age at cohort entry was 58.8, 6% are women Veterans, and 15% identify as black and 4.7% as Hispanic. Low back pain (21%) and osteoarthritis (18%) are the most common MSD. Over 16% had 2+ MSD diagnoses and 18% reported severe pain (NRS 7+) on the MSD diagnosis date. Diabetes (18%), depressive disorders (14%), and PTSD (8%) were common comorbidities. Temporal trends were observed in Veterans entering the cohort: increasing proportions are women, minority, and younger; more reporting of severe pain; yet no substantial changes in substance use disorders. The MSD cohort is a rich resource for collaborative pain-relevant epidemiological and health service research.

#### (146) Pain comorbidity and the transition from episodic to chronic migraine: results from the CaMEO (Chronic Migraine Epidemiology & Outcomes) study

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Several pain disorders are comorbid with migraine, especially chronic migraine (CM). Herein, we examine the influence of extra-cephalic pain on the progression of episodic migraine (EM) to CM and on the persistence of CM over a 3-month period. Participants were recruited from a US web-panel using quota sampling, and completed web-based questionnaires at baseline and 3 months. Respondents who met ICHD-3 beta criteria for migraine were classified into EM ( $<15$  headache days/month) and CM ( $\geq 15$  headache days/month) subgroups. Respondents also completed the Total Pain Index, a validated questionnaire that measures the frequency of pain (0=none of the time; 4=all of the time) in 9 body locations. The number of extra-cephalic pain sites (EPS) was defined as the number of locations (excluding the head) with pain most or all of the time. Multivariate binary logistic regression assessed the influence of EPS on (1) CM onset in persons with EM at baseline, and (2) CM persistence among persons with CM at baseline, adjusting first for demographics, then baseline headache days, in nested models. Of 8,908 eligible respondents, 8,139 had EM and 769 had CM. Of respondents with baseline EM, 278 (3.4%) transitioned to CM 3 months later. The odds of developing CM increased by 42% with each additional EPS in models adjusting for demographics (OR 1.42 [95% CI 1.33–1.52]); results remained significant after adjusting for baseline headache days/month (OR 1.30 [1.21–1.40]). The baseline CM subgroup had a 15% increase in the odds of remaining CM for each additional EPS after adjusting for demographics (OR 1.15 [1.07–1.25]); additional adjustment for headache days/month was nonsignificant (OR 1.06 [0.97–1.16]). These findings support the hypothesis that a high propensity for extra-cephalic pain is associated with (1) progression from EM to CM and (2) maintenance of CM. Funding: Allergan, Inc.

#### (147) Ocular pain is associated with dry eye symptoms

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Dry eye is a heterogeneous condition whose signs have been defined as disturbances of tear function, abnormalities of the ocular surface, and symptoms including visual disturbances and discomfort, although discrepancies between signs and symptoms have caused difficulty for diagnosis and treatment. Prevalence estimates for dry eye range from 5% to over 35%, and dry eye has been shown to have a significant impact on quality of life. Although ocular pain has been suggested as a key component of dry eye for at least a subgroup of patients, the characterization of this type of pain, and its relationship to traditional symptoms of dry eye, has not previously been systematically investigated. Given a recent large twin study, showing that dry eye likely shares genetic factors and a common etiological pathway with other chronic pain syndromes, identifying and describing the pain component of dry eye may provide a new avenue for defining and linking signs and symptoms of this condition. The primary purpose of the present study, therefore, was to evaluate whether the prevalence, severity, and quality of eye pain is associated with the severity of symptoms traditionally associated with dry eye. Seventy-six of 102 male veteran subjects (74.5%) were found to have mild-to-severe dry eye symptoms, and 86.8% of those with dry eye symptoms also reported ocular pain (pain intensity  $3.86 \pm 2.35$  (0-10 numerical rating scale)), compared to 7.7% of those without dry eye symptoms ( $0.15 \pm 0.54$ ;  $p < 0.001$ ). The most frequently reported qualities from the Short-Form McGill Pain Questionnaire that were chosen by dry eye subjects to describe their ocular pain were: "hot-burning" (28.9%), "aching" (19.7%), "tender" (19.7%), and "tiring-exhausting" (19.7%). Results indicate that ocular pain is a clinically important symptom of dry eye and that this pain may have neuropathic-like components in a subset of those with a dry eye diagnosis.