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(232) Experimental pain sensitivity in opioid dependent patients: a preliminary examination of opioid-induced hyperalgesia

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Prevalence data of pain in persons enrolled in or seeking treatment for opioid dependence have shown acute pain ranges of 48-80% and chronic pain (defined as lasting > 3 months) ranges of 24-61%. Growing evidence suggests that pronociceptive consequences result from long-term use of opioids. Opioid-induced hyperalgesia (OIH) is the paradoxical phenomenon of heightened pain sensitivity in individuals chronically exposed to opioids. The present analyses examined experimental pain sensitivity in opioid dependent (OD) persons without a current pain diagnosis. Eight OD participants from a residential study of opioid withdrawal were matched with Osteoarthritis (OA) participants with chronic knee pain and healthy controls (HC) on age, sex, and ethnicity (100% male; age x=49.17, SD= 4.25; Caucasian n=3, African American n=21). OA and HC participants were not on opioid medications. Quantitative sensory testing (QST) measures of pain threshold and pain modulation were completed. Results from a one-way ANOVA revealed statistically significant group differences on heat pain thresholds ($F(2,17)=4.122$, $p < .05$). Post-hoc tests revealed that both OD and OA participants had significantly lower heat pain thresholds compared to HCs ($p<.05$). The OD and OA participants did not significantly differ from one another. Although significant group differences did not emerge on other QST measures, trends were observed in which OA had the highest pain sensitivity, HC had the lowest and OD fell between the two. These preliminary analyses suggest OD individuals are more sensitive to experimentally induced pain compared to HC and demonstrate a comparable degree of thermal hyperalgesia similar to individuals with chronic knee OA pain. Further investigations with larger sample sizes are needed to validate these preliminary findings. Additional exploration of genetic, physiological and psychological factors that may account for these differences is necessary to help understand the mechanisms underlying the observed variability in response across groups.

(233) Situational catastrophizing mediates laboratory pain responses in sickle cell disease patients

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There are many components involved in the experience of sickle cell disease (SCD) pain, but relatively little research has explored the potential effects of psychosocial factors on SCD pain. Specifically, we have shown that situational pain catastrophizing is associated with greater temporal summation in other chronic pain populations, but these processes have not been extensively examined in SCD. In this study, African American sickle cell participants (N=62) and African American healthy controls (N=19) completed a battery of quantitative sensory tests, including thermal temporal summation procedures, and reported situational pain catastrophizing after each portion of testing. When compared to healthy controls, SCD participants reported significantly greater temporal summation responses ($p=.05$), and catastrophizing in response to temporal summation ($p=.04$), after controlling for age (mean age = 36.5, range 19-64) and sex (65% female). We tested the hypothesis that situational catastrophizing mediated the relationship between group and thermal temporal summation using a statistical bootstrapping technique including age and sex as covariates. The results indicate that a significant portion of variance in temporal summation response attributed to group was mediated by situational catastrophizing ($R2 = 12\%$, $t=-1.97$, $p=.05$). When catastrophizing was added to the statistical model, the effect of group on temporal summation response was no longer significant ($t=-1.44$, $p=.15$). The results suggest that the greater temporal summation observed in SCD patients may be explained, at least in part, by higher catastrophizing during laboratory pain testing. These findings suggest that managing catastrophizing may be an important part of understanding, and potentially treating, pain in SCD.

(234) Pain interference and sexual interference in a clinical sample of young adults with chronic pain

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Epidemiological studies estimate prevalence rates of chronic pain in young adults (18-25 yrs) at 15-30%. Despite this high rate in the general population, few studies have examined pain impact in clinical samples of young adults seeking chronic pain treatment. Understanding individual factors potentially associated with pain interference (e.g., patient sex, opiate use, body mass index/BMI) might help identify targets for treatment or prevention. We examine clinical characteristics of young adults (17-23 yrs) seeking treatment for chronic pain, with the goal of elucidating factors associated with higher levels of overall pain interference and sexual interference. Data was collected for all patients (n=298) seen for initial evaluation in an academic medical center's adult outpatient multidisciplinary pain clinic in a 4 year period (2007-2010). Patients completed an intake questionnaire assessing pain location(s), pain severity, overall pain interference (BPI: Brief Pain Inventory), and sexual interference due to pain (additional single item parallel to BPI items). Chart review identified prescribed medications for pain, as well as height and weight (used to calculate BMI). Multiple regression and t-tests were used to test whether sex, opiate prescription, or BMI was associated with interference outcomes. Mean age was 20.2yrs (SD=1.7); 61.8% were female. Primary pain locations included back (57.6%), joint/limb (15.2%), head (6.7%), neck (6.7%), and abdomen (4.9%). The majority of the sample (79.4%) reported pain in 2 or more locations. Opiates were prescribed to 24.4% of the sample. BPI pain interference was moderate, M=6.43 (SD=2.10), and sexual interference was lower, M=4.26 (SD=4.10). Overall pain interference, but not sexual interference, was higher among patients prescribed opiates ($p<.05$). No sex differences were observed. In a model predicting overall pain interference, higher BMI and opiate use were significantly associated with higher interference ($p's<.05$), suggesting that medication and general health factors may play a role in pain interference for young adults.

(235) Two patients with spontaneous intracranial hypotension who underwent epidural blood patches

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The authors report two cases of patients with spontaneous intracranial hypotension who underwent a lumbar epidural blood patch and then a subsequent thoracic epidural blood patch. The first patient is a 55-year-old woman who presented with a one month history of orthostastic headache with tinnitus, weakness, nausea, and blurry vision. The patient underwent an MRI of the brain which demonstrated sub-acute on chronic bilateral convex subdural hematomas. A total spine MRI demonstrated a possible 5mm subdural hematoma within the dorsal subdural space at L5-S1 of an indeterminate age. An epidural blood patch was performed at the L4-5 level with minimal resolution of her symptoms. The patient underwent a repeat epidural blood patch at the T3-4 level which resulted in resolution of her symptoms. The second patient is a 66-year-old woman who presented with a one-week history of orthostatic left frontal and bilateral occipital headaches with neck pain, tinnitus, and nausea. The patient underwent an MRI of the brain which demonstrated diffuse smooth dural prominence with enhancement. MRI of the spine showed no abnormalities. The patient failed conservative management and an epidural blood patch at the L4-5 level was attempted with only transient relief of symptoms. The patient then underwent a T5-6 epidural blood patch with marked improvement in her symptoms. Spontaneous low CSF pressure headache is being recognized with increasing frequency. It is estimated to be 5 per 100,000 per year with a peak around 40 years of age. Treatment consists of conservative management and then consideration of an epidural blood patch. Some literature suggests site-directed epidural blood patch treatment but this requires further diagnostic procedures. With our patient encounters we suggest a thoracic epidural blood patch can be effective in cases in which lumbar epidural blood patches are not successful.