A04 Clinical Outcomes Measurement

(108) Evidence of physical deconditioning in adolescents with juvenile fibromyalgia: deficiencies in strength and balance

S Sil, S Thomas, D Strotman, C DiCesare, T Ting, G Myer, and S Kashikar-Zuck; Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Juvenile Fibromyalgia (JFM) is a chronic widespread musculoskeletal pain condition associated with significant physical impairment and extended periods of inactivity, which can lead to physical deconditioning and loss of confidence in initiating exercise. Adolescents with chronic musculoskeletal pain are susceptible to altered strength and functional stability that may exacerbate their chronic pain. Specifically, functional deficits can alter joint mechanics that increase risk for injury and pain flare-ups with physical activity and further contribute to exercise intolerance in patients with JFM. The primary aim of this study was to objectively assess strength and functional stability in adolescents with JFM. Nine females with JFM (Mage = 16.5, SD = 2.02) were compared to healthy, active females matched by age, height, and weight (Mage = 15.17, SD = 1.5) on measures of lower extremity strength (peak isokinetic knee extension, knee flexion, hip abduction) and functional stability (Star Excursion Balance Test). Patients with JFM demonstrated deficits in their peak knee extension strength (M = 0.45 ft-lbs/kg, SD = 0.09) compared to norms (M = 1.21, SD = 0.19); however, knee flexion strength was comparable to matched controls. Adolescents with JFM demonstrated nearly 60% reduction in hip abduction strength (M = 0.37 ft-lbs/kg, SD = 1.20) relative to norms (M = 0.99, SD = 0.33). Functional stability also was reduced bilaterally among patients with JFM (Mright = 80.2%, SD = 10.1; Mleft = 82.0%, SD = 7.0) compared to controls (Mright = 95.7%, SD = 5.2; Mleft = 97.4%, SD = 7.2). Adolescents with JFM demonstrate deficits in strength and balance, which may increase their risk for physical activity related injury and pain. Integrative neuromuscular training focused on correcting these deficits may support interventions for JFM to further improve pain and function. Funded by NIAMS Grant #K24AR056698-09 and the Division of Sports Medicine.

(109) Differences in patient-reported outcomes in spine surgery patients on opioids prior to surgery: preliminary findings from international PAIN-OUT postoperative pain registry

A Dagal, J Hecker, R Bransford, R Zaslansky, M Koman, A Cahana, and D Gordon; University of Washington, Seattle, WA

Excellent pain control is difficult to achieve following major spine surgery. Suboptimal postoperative pain control may delay recovery, extend the hospital stay, increase medical costs, increase rate of complications, lead to development of chronic pain, and contribute to poor patient satisfaction. Patients on opioid treatment prior to surgery represent a unique challenge. We investigated differences in pain treatment patterns and patient reported outcomes in spine surgery patients with and without opioid therapy prior to surgery from the international PAIN-OUT registry (www.pain-out.eu). Data includes medical record information and self-reported patient outcomes using the International Pain Outcome (IPO) survey from Europe, North America, South America, Asia and Africa. Of 1039 spine surgery patients enrolled between June 30, 2010 and October 5, 2012, 918 with available data on prior opioid use were examined. On admission 222 (24%) were on some type of opioid regimen. There were no significant differences between groups for age, gender, or length of surgery. Patients on opioids prior to admission reported more postoperative pain (worst pain 7.2/10 vs. 5.9, least 3.2 vs. 2.3; amount of time in severe pain 41% vs. 33%; p = <0.001), and felt more anxious, depressed and helpless. Those on opioids prior to admission also reported more pain interference with postop activities (in bed 6.4 vs. 5.1, out of bed 5.1 vs. 4.0; p = <0.001), falling asleep (5.3 vs. 3.6, p = .02), and were less satisfied with results of pain treatment (7.5 vs. 8.0, p = 005) though clinical significance is debatable. Significant differences in worse pain, time in severe pain and in bed activities interference appear present for patients who received ketamine though sample sizes for this group are small. Findings will be used to form a local quality improvement initiative focused on optimizing multimodal treatment.

(110) Determining the pain impairment and global mental health in individuals with traumatic brain injury >two years and chronic pain: impact on life care planning and health care utilization

A Miciano; Nevada Rehabilitation Institute, Las Vegas, NV

In individuals with Traumatic Brain Injury (TBI), research on the effect of anxiety, depression (AD) and chronic pain on health care utilization, which can be assessed by global health measures, is scarce. The use of global health items permits an efficient way of: gathering general health perceptions; providing useful summary information about health; and, predicting of health care utilization and subsequent mortality. The study determined the pain-related impairment (PRI) using the Pain Disability Questionnaire (PDQ), a pain severity assessment from the AMA Guides to Evaluation of Permanent Impairment, 6th Ed. in individuals with TBI >two years and with chronic pain, along with their global mental health status. A retrospective study was done in a comprehensive outpatient rehabilitation facility on 39 of 100 subjects (21 men). Outcome measures used were: the PDQ, PROMIS-Anxiety, PROMIS-Depression, and Berg Balance Scale (BBS). PRI was categorized by the PDQ, based on Functional Status (FS) and Psychosocial Distress Status (PS). Global Mental Health (GMH) was measured using the PROMIS-Anxiety & PROMIS-Depression (AD) subscales. Physical Performance Status (PPS) was calculated using BBS. Clinical scores ranged: total PDQ 6-150 of 150 (average 92); PROMIS-Anxiety T-score 37-83 (average 60); PROMIS-Depression T-score 38-81 (average 59.2); and, BBS 8-56 out of 56 (average 42.0). Subjects with TBI >2 years and with chronic pain tend to be with moderate pain-related impairment and decreased global mental health, along with fair physical performance. The study found a trend relationship of the PRI to GMH and PPS and that the health burden of TBI care to be extensive due to the clinical complexity involving both physical and psychosocial aspects. It recommends that the PDQ and PROMIS be part of the outcome measures for these difficult-to-manage subjects who needs integrated care. Further study on the correlation of the PDQ, PROMIS, & PPS scores should be done.

(111) Physiologic, endocrine, an inflammation status after 10 years of high dose opioid treatment

F Tennant; Veract Intractable Pain Clinic, West Covina, CA

There is limited knowledge about the outcomes of long-term opioid therapy in non-cancer patients. Between July and October 2012, 40 patients who had been in high dose opioid therapy (over 100 mg equivalence of morphine a day) for 10 or more years were evaluated. Patients all met the California definition of intractable which is "incurable by any known means". All had experienced multiple non-opioid therapies and all claimed constant, debilitating pain with severe insomnia prior to high dose opioid therapy. Evaluation consisted of two written questionnaires and testing for serum cortisol, pregnenolone, corticotropin (ACTH), testosterone, erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP). Questions asked about improvement in 17 physiologic functions including reading, hearing, concentration, memory, driving, sleep, movement, dressing, and libido. The other questionnaire asked about depression, hopelessness, and quality of life before and during opioid treatment. All 40 patients reported sustained pain control on a stable opioid dosage and improvements in multiple physiologic functions, depression, hopelessness, and quality of life. An abnormal hormone finding was present in 13 (32.5%) and an elevated inflammatory marker (ESR, CRP) was present in 9 (22.5%). The most common endocrine abnormality was low serum pregnenolone (4; 10.0%). The high dose opioid patients studied here greatly improved many physiologic functions as well as mental outlook on depression, hopelessness, and quality of life. Endocrine abnormalities likely represent opioid suppression in most cases. The elevated inflammatory markers suggest that the underlying cause of pain is still active or there may be on-going neuroinflammation related to centralized pain.