



RESEARCH  
EDUCATION  
TREATMENT  
ADVOCACY

### (104) Pain, mood, and functional status in youth with sickle cell disease hospitalized for pain

W Zempsky, E O'Hara, J Santanelli, and T Palermo; Connecticut Children's Medical Center, Hartford, CT

Youth with sickle cell disease (SCD) are frequently hospitalized for severe episodes of pain. As part of a validation study of a new acute pain functional assessment tool we collected data at a single time point during hospitalization on a sample consisting of 159 unique SCD patients (55.3% female, 86% African American, 67% Hgb SS), ages 7-21 years ( $M=15.73$ ,  $SD=3.63$ ) who were admitted for vaso-occlusive episode at four urban children hospitals in the eastern United States. In this sample we describe current pain intensity, functional motor status (Functional Independence Measure; FIM), and mood (Positive Affect-Negative Affect Scale for Children; PANAS-C) as well as pain burden (Sickle Cell Pain Burden Interview-Youth; SCBPI-Y), functional status (Child Activity Limitations Interview; CALI), and quality of life (Pediatric Quality of Life Inventory; PedsQL) over the previous four weeks. Regarding the measures, the average self-report pain rating was 5.86 ( $SD=2.14$ ; range 0-9.80), current function on the FIM motor scale was 56.64 ( $SD=15.23$ ; range=21-91) and the average score for the PANAS-C Positive Affect was 26.52 ( $SD=11.00$ ; range=12-56). For the previous 4 weeks the SCBPI-Y average score was 10.53 ( $SD=5.53$ ; range=0-23), the average score for the CALI was 23.96 ( $SD=17.56$ ; range=0-70.41) and the PedsQL average score was 61.65 ( $SD=17.05$ ; range=14.13-100). Youth with SCD experienced moderate pain and as well as moderate reduction in function and mood at the time of hospitalization. In the weeks leading up to hospitalization the subjects also experienced reduced functional ability, quality of life and increased pain burden. Further analysis will focus on understanding the relationships between pain, function and mood in youth with SCD hospitalized for pain.

### (105) A correlative study of the spine impairment rating, the pain disability status, and the physical performance status of individuals with poly-trauma history over two years and with a spine impairment

A Miciano; Nevada Rehabilitation Institute, Las Vegas, NV

The study measured the pain disability status (PS) of poly-trauma subjects with chronic non-malignant pain (CNMP) and spine impairment and investigated the correlation between PS, whole person impairment rating due to the spine (WPIS) and scores from Physical Performance Tests (PPT). A retrospective study was undertaken in an outpatient rehabilitation clinic. 30 subjects (13 men) with CNMP due to spine impairment from poly-trauma >two years completed the PDQ. Outcome measures were: the Pain Disability Questionnaire (PDQ) and the Diagnosis-Based Impairment method (DBI), both from the AMA Guides Sixth Edition. The PDQ measured the PS. The DBI quantified the WPIS, established by exact criteria and then adjusted by grade modifiers. The Physical Performance Tests (PPT) were: 6-Minute Walk Test (6MWT), Berg Balance Scale (BBS), & Dynamic Gait Index (DGI). Pearson correlation coefficients ( $r$ ) examined total PDQ, WPIS, and PPT associations. Owing to the study's exploratory nature, a conservative alpha of .01 was used for statistical analysis. Total PDQ, resulted in: 17% mild; 30% moderate; 47% severe; and, 6% extreme PS. The DBI showed: 14% WPIS at cervical neck; 7% WPIS at thoracic; and, 15% WPIS at lumbar. Total WPIS from all subjects had a mean of 25% ( $SD=10.6\%$ ). A statistically significant negative correlation was found between PDQ and: 6MWT-distance ( $r=-.559$ ,  $p=.002$ ); 6MWT-metabolic equivalents ( $r=-.562$ ,  $p=.002$ ); 6MWT-speed ( $r=-.550$ ,  $p=.002$ ); DGI ( $r=-.561$ ,  $p=.002$ ); and, BBS ( $r=-.570$ ,  $p=.002$ ). Though not significant based on our criteria, there was a positive association between PDQ and WPIS ( $r=.341$ ,  $p=.070$ ). We found that poly-trauma subjects with spine impairment(s) had: severe PS, high WPIS, walked less distance slowly, low energy expenditure capacity, poor dynamic gait, and high balance deficits. These findings suggest that the PDQ is a potential indicator of physical performance status in individuals with spine impairments. Further research into its application amongst other patient populations, such as in Radiculopathies, would be beneficial.

### (106) The development of an inpatient functional ability measure among pediatric sickle cell disease

W Zempsky, E O'Hara, J Santanelli, and T Palermo; Connecticut Children's Medical Center, Hartford, CT

The purpose of the current study was to understand the difference between perception of ability and actual functional ability for youth with SCD hospitalized for acute pain. We asked patients to rank their perception (i.e., how difficult would this activity be) and actual functional ability (i.e., how difficult was this activity for you today). 96 patients with SCD (60.4% female), ages 8-21 ( $M=16.19$ ,  $SD=3.7$ ), were recruited from 4 centers during their hospital admission for acute pain. Participants completed a preliminary version of the Acute Pain Physical Activity Questionnaire (APPAQ). This measure was developed by a team of experts after a review of the literature, interviews with youth with sickle cell disease and their parents and utilizing data from a previous study performed by team members. The preliminary APPAQ consists of two 40-item questionnaires. One questionnaire assessed perception of difficulty, the second questionnaire assessed the difficulty of actually completing each of the 40 activities. The activities were ranked on a 5-point Likert scale from "No difficulty" to "Impossible." Perception of ability was significantly associated with actual ability ( $r=0.67$ ,  $p<.001$ ). A significant difference between the scores of perception and actual ability was found using a paired-samples  $t$  test ( $t(1, 93) = 8.58$ ,  $p<.001$ ), indicating that participants endorsed more difficult ratings on perception of tasks than actual difficulty completing activities. The findings of the current study demonstrate a direct correlation between perception of and actual physical function for youth with SCD hospitalized for acute pain although youth with SCD in this setting may perceive physical activities to be more difficult than the actual performance of these activities. Future research should explore whether the measures of perception or actual ability are more appropriate for use in the evaluation of physical function in the acute setting.

### (107) Initial validation of a modified version of the Roland-Morris Disability Questionnaire (RMDQ) in a general chronic pain population

J Senske and M Harris; UBC, Inc., Bellevue, WA

The original Roland Morris Disability Questionnaire (RMDQ) consists of 24 statements describing activity limitations stemming from back pain specifically, such as self-care and physical limitations. The RMDQ has shown good reliability and has also been utilized in languages other than English. An issue in many chronic pain clinics is that all types of pain from various anatomical structures are being treated, such as knee pain, wrist pain, etc., which raises the question of the ecological validity of the RMDQ when used with individuals suffering from chronic pain other than back pain. The current study examines the validity of a modified form of the RMDQ compared to the original version in individuals attending a multidisciplinary pain management clinic for chronic pain. Development of an instrument that can validly assess activity limitations due to chronic pain of various origins, not just back pain, is necessary in order to accurately assess the impact that an individual's pain has on their functioning. Subjects were referrals for chronic pain management treatment with predominately low-back pain (62%) and a typical mix of other pain sites. Fifty sequential evaluations for admission into the interdisciplinary chronic pain management program were alternatively given the ORIGINAL or the MODIFIED RMDQ. Fifty sequential discharges from the 20-day interdisciplinary treatment were also alternatively given either version. A 2X2 ANOVA revealed a statistically significant PRE/POST reduction on both the ORIGINAL/MODIFIED versions (less self-rated disability). There were no significant mean differences between the two versions at either sample time nor was the interaction effect significant. The current investigation provides initial validation of a modified version of the RMDQ for a typical mix of individual referred to and participating in interdisciplinary pain management treatment. It is believed that such a modification allows more universal access to this type of self-reported disability questionnaire.