IMPROVING THE SENSITIVITY OF PHYSICAL FUNCTION MEASURES IN RHEUMATOID ARTHRITIS: USE OF ITEM RESPONSE THEORY IN PATIENTS TREATED WITH ABATACEPT (CTLA4iG)

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OBJECTIVES: The Health Assessment Questionnaire (HAQ) and the Modified HAQ (MHAQ) are examples of common short-forms of physical function used to measure improvement in the treatment of rheumatoid arthritis (RA) which have been associated with ceiling problems. These problems, inherent to short-form surveys, pose risks of failing to detect a treatment response in clinical trials. Item Response Theory (IRT) methods were used to examine the properties of two physical function measures and construct a combined measure to better detect changes in disease activity and treatment response. METHODS: Data were from a 12-month, double-blind, multi-center study of 339 RA patients on a background of methotrexate randomized to Abatacept at 2mg/kg, at 10mg/kg, or placebo. MHAQ and SF-36 (with its Physical Functioning scale, PF10) were administered at pretreatment and 3, 6, and 12 months post-treatment. IRT methods were used to examine the surveys’ measurement properties and compute new IRT-based physical function scores. Analyses of variance were used to assess sensitivity to changes in disease severity and treatment response. Relative validity coefficients were used to compare the measures. RESULTS: A Rasch IRT model fit the data. IRT-based scores successfully lowered the floor and raised the ceiling of the physical function measured. IRT-based scores were 30% more efficient than MHAQ and 50% more efficient than PF10 in discriminating among ACR groups. In discriminating among treatment groups, IRT-based scores were 25% more efficient than MHAQ and 12% more efficient than PF10 at 6-months; and 16% and 17% more efficient at 12-months based on observed effect sizes. CONCLUSIONS: Using IRT methodology to estimate a combined score for physical functioning lead to greater range of the construct measured. The improved measure, with greater measurement precision and sensitivity to treatment response, further confirmed the beneficial effect of Abatacept on physical function in the treatment of RA.

REVALIDATION OF THE CEDARS-SINAI RHEUMATOID ARTHRITIS HEALTH-RELATED QUALITY OF LIFE (CSHQ-RA) SHORT FORM INSTRUMENT

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OBJECTIVE: This study reassessed the psychometric performance of the 11-item CSHQ-RA Short Form using a representative population of RA patients from 55 sites across the US. METHODS: 307 of 309 screened patients from a 24-week multicenter, open-label, single arm study of RA patients receiving anakinra completed the CSHQ-RA, the Medical Outcomes Study Short Form-36 (MOS SF-36) and the Stanford Health Assessment Questionnaire (HAQ) Disability Index. Data at screening and baseline were used to examine the convergent validity, discriminant validity, internal consistency, and test-retest reliability. Convergent validity was tested, using Pearson’s correlations, by comparing total score on the CSHQ-RA to those from the Mental and Physical Component Summary (MCS and PCS) of the MOS SF-36 and HAQ. ANOVA and Kruskal-Wallis tests were used to assess the discriminant validity of the CSHQ-RA. Internal consistency was measured by Cronbach’s alpha coefficient. Test-retest reliability was assessed using intraclass correlation coefficient (ICC). RESULTS: Response rate at baseline was 95% (291). 81% of respondents were female; mean age was 52 years (±12); mean duration with RA was 10.8 years (±10.4). Mean scores were CSHQ-RA Short Form 68.0 (±16.0), MCS 37.9 (±10.9), PCS 31.2 (±8.3), and HAQ 1.5 (±0.7). Pearson’s correlations with MCS, PCS, and HAQ were –0.69, –0.70, and 0.76 (P<0.0001), respectively, demonstrating good convergent validity. The difference in scores on the CSHQ-RA Short Form of patients with different levels of physical disability as measured by the HAQ was statistically significant (P<0.0001). Cronbach’s alpha coefficient was 0.89, indicating good internal consistency. Test-retest reliability was great with ICC equal to 0.94. CONCLUSIONS: The results of this study support the validity and reliability of the 11-item CSHQ-RA Short Form as a measure that captures the impact of RA on patients’ quality of life. Research to assess responsiveness and clinically significant change of the CSHQ-RA is under way.

PREFERENCE AND WILLINGNESS-TO-PAY FOR VIOXX® AS A TREATMENT FOR OSTEOARTHRITIS RELATIVE TO NSAIDS

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OBJECTIVES: Cox-2 selective inhibitors have been shown to have similar efficacy but a reduced gastrointestinal (GI) side-effect profile compared to non-selective non-steroidal anti-inflammatory drugs (NSAIDs). The purpose of this study was to use conjoint analysis (discrete choice methodology) to value the reduction in risk of GI side effects with VIOXX (a Cox-2 inhibitor) when compared with non-selective NSAIDs in patients with Osteoarthritis (OA). METHODS: Eighty-five participants with OA were recruited for this project and asked to complete questions regarding demographics, their OA and GI-related symptoms and a discrete choice task. The attributes used in the willingness-to-pay (WTP) scenarios included values for risks associated with complicated perforations, ulcers and bleeds (PUBs), uncomplicated PUBs, minor GI adverse and the cost of medication to the patient. The risk estimates were derived from clinical studies between VIOXX and non-selective NSAIDs. RESULTS: Participants ranged in age from 49–83 years (mean = 64.3 years). Twelve patients were excluded because they were either non-traders (2) or irrational in their choice task (10), leaving an effective sample size of 73. The total WTP for the reduced risk of GI-complications provided by VIOXX, was A$37.85 per month (95% CI 22.09–98.34). This included a WTP of A$36.27 and A$38.43 for the reduced risk offered by VIOXX of uncomplicated and complicated PUBs, respectively. For minor GI events, the difference between the levels was not statistically different from zero, indicating that no difference was seen between the levels by the respondents. The point estimate from this attribute produced a negative WTP (~A$16.85) that