Determining Preinjury Physical Function Scores in Orthopaedic Trauma Patients

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Background/Purpose: Use of patient-reported outcome (PRO) measurement instruments has become a common way to determine health status, with a plentitude of validated and reliable tools available. Computer adaptive tests (CATs) have reduced patient burden and increased availability of these functional tests. Establishing pre- and postintervention functional scores is quite simple in elective surgical practice. However, in orthopaedic trauma, functional status scores are not collected before injury. Further, the patient is often unable to complete the instrument upon entry into the hospital. Due to a lack of baseline data, surgeons are unable to determine if patients have returned to previous physical function. Attempts to rectify this gap in the data focus on patient recall or proxy assessment. This has not been addressed, and is of critical importance to, the orthopaedic trauma literature on functional assessment.

Methods: Orthopaedic trauma patients had their first postoperative appointment approximately 2 weeks after surgery. Any patient who met the selection criteria (over 18 years of age, English-speaking, attending the appointment with a proxy) as determined through chart review and interview were asked to participate in the IRB-approved study, as were their proxies (over 18 years of age, English-speaking, had witnessed the patient at their highest level of functioning in the previous 6 months). Participants were asked to complete the PROMIS Physical Function Computer Adaptive Test (PF CAT) and a preinjury activity questionnaire (FITT). Patients were asked to respond to the physical function questions as they believed they were able to function prior to injury. Patient proxies were asked to respond to the physical function questions as they believed the patient was able to function prior to injury. Intraclass correlation as well as paired-sample *t*-tests and 95% confidence intervals (CIs) were used to analyze agreement between patient and proxy responses on both questionnaires. A correlation of 0.7 represents a large effect and shows agreement between patient and proxy responses.

Results: 50 patient-proxy pairs completed both questionnaires at an average of 14.33 days postoperative. Patient mean PF CAT T-score was found to be 57.92 (SD = 10.38). Proxy mean PF CAT T-score was found to be 56.59 (SD = 11.50). Paired-samples *t*-test showed that on average, patient's PF CAT score is not different from proxy's PF CAT score (mean score difference = 1.33; 95% CI = –1.28, 3.94; $P = 0.311$). Intraclass correlation between patient's score and proxy's score is 0.79. Patient mean FITT score was found to be 11.32 (SD = 5.46). Proxy mean FITT score was found to be 10.86 (SD = 5.49). Paired-samples *t*-test showed that on average, patient's FITT score is not different from proxy's FITT score (mean score difference = 0.46; 95% CI = –0.70, 1.62; $P = 0.429$). Intraclass correlation between patient's score and proxy's score is 0.84.

Conclusion: High agreement in PF CAT and FITT responses between patients and proxies who have been present for the patient's highest level of functioning in the 6 months prior to injury suggest we can be confident in patients' ability to report accurate preinjury

See pages 99 - 147 for financial disclosure information.

physical functioning at their first postoperative follow-up appointment. This is critical to furthering research on orthopaedic trauma functional outcomes, as it establishes the ability to assess preinjury function from the patient. Only with this information will it be possible to determine return to functional baseline after traumatic injury.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.