Approaching distal radius fractures from a unified perspective

Distal Radius Fracture (DRF) is one of the most common traumatic orthopedic conditions among adults. However, a common metric to assess outcomes does not exist. We propose a comprehensive approach to outcomes assessments for DRFs that would improve our ability to compare treatments and predict objective and subjective outcomes.

Toward Unified Outcomes Assessment
Creating a unified framework to assess outcome measure is appealing for several reasons. Registries that contain consistent outcome measures allow for evaluation across treatment groups locally, regionally, nationally and internationally and allow for longitudinal follow-up. From a research perspective, standardized assessment provides a common metric to define best practices and allow meaningful comparisons. Finally, this tool would facilitate tracking outcomes for the purpose of examining performance, quality, and costs over time.

In 2014, the Distal Radius Working Group (DRWG) of the International Society for Fracture defined a preliminary set of recommendations regarding important domains most relevant to DRFs (Fig. 1.).

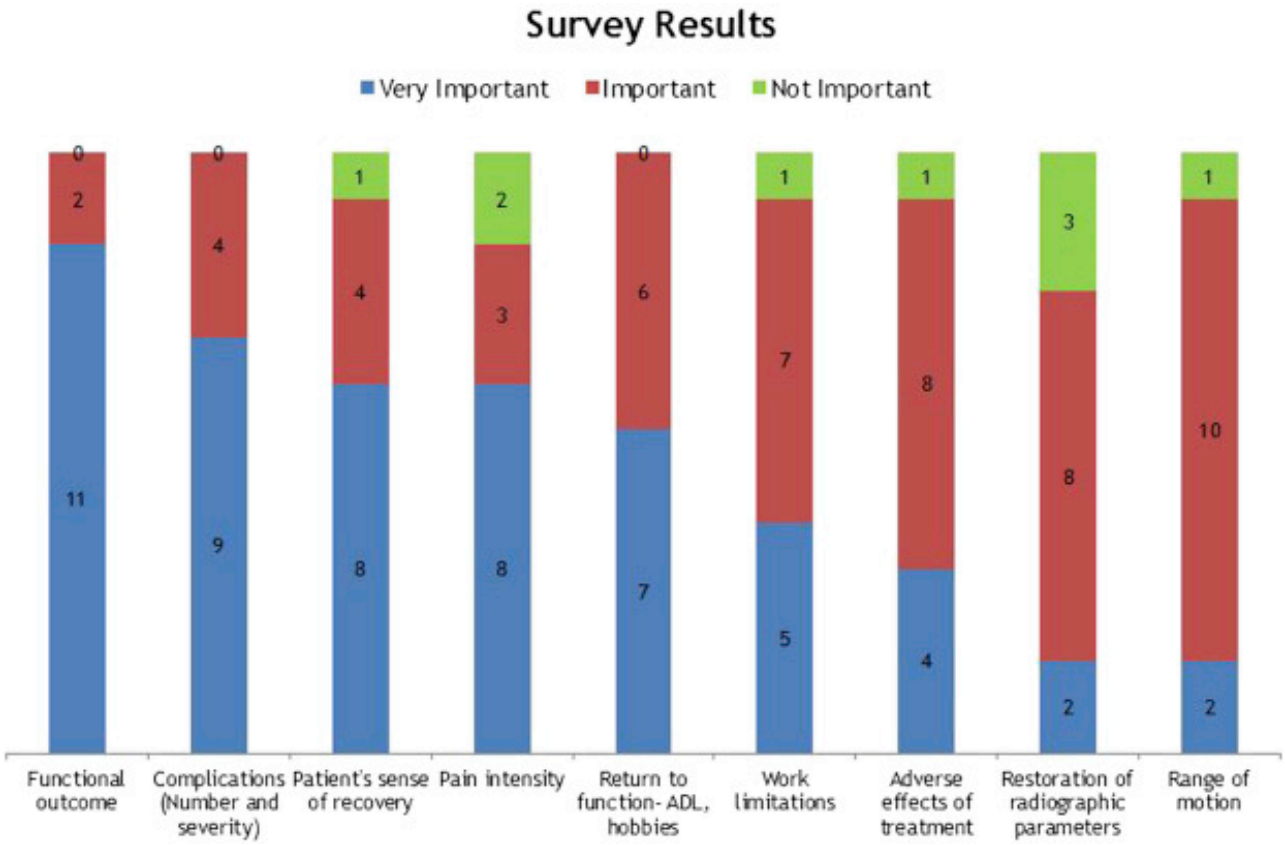

Fig. 1. Consensus of the Distal Radius Working Group of the International Society for Fracture Repair and the International Osteoporosis Foundation regarding the importance of outcomes after DRFs. (Reprinted with permission from Goldhahn J, Beaton D, Ladd A, Macdermid J, Hoang-Kim A. Recommendation for measuring clinical outcome in distal radius fractures: a core set of domains for standardized reporting in clinical practice and research. Arch Orthop Trauma Surg . 134(2):197–205.

Performance

Grip Strength and range of motion (ROM) remain 2 of the most commonly reported outcomes in DRF literature. Restoration of near-normal grip strength and ROM have been shown to correspond with improved patient satisfaction and patient-reported outcomes (PROs) at 1 year after fracture.

Patient-reported outcomes

PROs refer to subjective assessment describing an array of concepts, but symptoms and disability are most applicable to DRF. PROs capture the outcomes most important to patients including participation, such as ability to return to work, than other more objective clinical measures.

Upper extremity-specific PRO measures:

These include domains most relevant to patients to have experienced DRF, such as patient's ability to return to activities of daily life and own perception of pain. Commonly used PRO instruments include the Michigan Hand Questionnaire and the Disabilities of the Arm, Shoulder and Hand questionnaire. At least one of these instruments should be used.

Comprehensive PRO measure:

There are additional generic instruments that capture aspects of health status and quality of life beyond hand function and may be useful to place upper-extremity conditions into a broader context and identify their contribution to overall disability. The Patient-Reported Outcomes Measurement Information System (PROMIS) is an integrated collection of instruments designed to capture self-reported health status across 3 broad domains: physical, mental and social.

Pain

Pain is the predominant symptom during the early period of recovery after DRF. Pain may be best captured using numeric or visual analog scales.

Complications

Complications after treatment of DRFs can be broadly classified into early (occurring within the first 6 months of treatment) and late (occurring 6 months after treatment or later).

Radiographs
Radiographic outcomes are most commonly recorded after treatment of a DRF. To capture these outcomes, radiographs should be obtained at defined intervals regardless of clinical course. However, radiographic indices should not be considered primary outcome measures because they may not correlate with symptoms or functional outcomes.

Timing of Outcomes Assessment
The minimum period for successful outcomes assessment should be 1 year after treatment. In the early period, patients are seen minimally at 2 and 6 weeks, but more frequent clinical follow-up in this early period may be necessary. Outcomes assessment should occur again at 3 and 6 months to determine the patient's recovery, the return of strength and ROM. At 12 months, outcomes should be assessed again to capture late clinical events.
Summary
Based on current evidence regarding outcomes assessment for DRFs, we recommend a systematic approach to capture outcomes effectively across 5 domains: performance, PROs, pain, complications, and radiographs. We propose a checklist for the minimum outcomes to be captured after treatment of DRFs and recommend that this serve as a framework for clinicians who treat DRFs as well as for investigators who design studies that aim to optimize treatment. This systematic approach provides an opportunity to create a uniform method to describe outcomes and develop standards by which treatment options may be more accurately compared.

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Publication

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