Distal radius fracture AO type C, treatment and outcome. An observational study of 12199 fractures from the national Swedish fracture register.

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Background

The distal radius fracture (DRF) is the most common fracture in the adult population. Despite recent advances, optimal treatment is still controversial. In addition, there are often substantial differences between DRFs regarding trauma mechanism, treatment, functional demands and outcome.

Aim

The aim of this study was to study epidemiology, treatment and outcome of AO type C fractures using data from a large national register study

Material and methods

We used prospectively collected data from the Swedish fracture register. All AO type C distal radius fractures registered between April 2012 and December 2018 in patients were included. Data on epidemiology, fracture type, trauma mechanism, treatment are registered by the physician treating the patient. Patients are also sent a subjective outcome questionnaire including EQ-5D, EQ-5D VAS and Short musculoskeletal function assessment questionnaire (SMFA-score) at the time of injury and after 12 months. Logistic regression analysis was used to assess differences between treatment methods.

Results

A total number of 12 199 cases with AO type C fracture were identified. The AO type C1 fracture was most common with 5400 cases, followed by AO type C2 with 4304 and AO type C3 with 2495. Cast treatment and surgical treatment with volar locking plate fixation were the most common treatments, 6042 (49.5%) and 4325 (35.5%) patients respectively. Less common methods were external fixation (0.6%), double plates (1.3%) and bridge plate (0.1%). AO type C1 fracture had the most favorable outcome regarding EQ-5D and SMFA-score, followed by AO type C2. In AO type C3 fractures, dorsal plating and external fixation were associated with an inferior hand/arm function index. In AO type C1 fractures K-wires was associated with an inferior SMFA bother index. Otherwise no differences were found between the treatment methods regarding patient-reported outcome.

Conclusion

This nationwide register study provides detailed data on AO type C DRFs regarding epidemiology, treatment and self-reported outcome. A good outcome after a type C fracture is possible, but many patients do not recover completely. Patients' expectations and psychological factors might influence the outcome. No treatment method was found superior.

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