

# **Accuracy of the Modified AO/OTA Classification used in the Swedish fracture registry for proximal humeral fractures in adults**

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## Background

Quality registers are used to perform quality checks, cost calculations and research regarding outcomes of surgical and non-operative treatment. The Swedish Fracture Register (SFR) grows, the number of studies based on the register increases and therefore it is important to evaluate the data in the register.

## Aim

The primary aim of this study was to examine accuracy of the radiographic classification for proximal humeral fractures used in the SFR in comparison to a gold standard.

Secondary aim was to assess the interrater reliability.

## Method

All patients with proximal humerus fractures registered in the SFR between 2019-03-01 and 2019-08-31 at Kalmar, Västervik and Linköping Hospitals were included.

171 patients were reassessed at 2 occasions >3 weeks apart independently by 1 surgeon at each center. A "Gold Standard" classification was established by consensus discussion with 4 shoulder surgeons and compared with the classification category registered in the Swedish Fracture Register. Calculations were conducted using Kappa statistics.

## Results

Accuracy: Kappa 0,36, 95% CI 0,297-0,425) and percent agreement (PA) 44%. Interrater reliability between the 3 original raters at session 1 and 2 was kappa 0,44-0,56 (PA 52-62%)

## Discussion

For registers to be of use the accuracy of imputed data is essential as well as coverage, completeness, validity and reliability. The results in this study show that the modified AO/OTA fracture classification for proximal humerus fractures used in the SFR had fair accuracy and moderate agreement, which questions this register data in the SFR as a base for scientific research and clinical decisions.