

# Correlation Between Frykman Grading And Overall Outcomes Following K Wire Fixation Of Distal Radius Fractures

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## Citation

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## Abstract

**Objective:** To evaluate the outcomes in patients who had K-wire fixation for wrist fractures over a 2 year period, and, to identify a correlation between them and Frykman grading.

**Design:** A retrospective study conducted using a standard set of questions (Mayo wrist score) posted to patients. Patients more than 18 years of age who had K wire fixation for distal radius fracture between May 2009 and May 2011 were included. Clinical notes and Radiologic evidence was gathered to confirm diagnosis and procedure. . In addition to Mayo scoring, time to surgery and Frykman classification of the fracture were identified. Frykman classification was validated by a Consultant Hand Surgeon.

**Findings:** 52 patients (53 wrists) had this procedure done. The F to M ratio was 7.6 : 1 (46/6). The average age is 64 with a range between 24 and 91. Mean age for Women is 64.2 and for Men it is 61.3. 1 out of these 52 patients is resting in peace. 35 of these 51 patients have replied back. 3 of these 52 patients had further procedure in terms of 2 converted to ORIF and 1 to an Ulnar osteotomy.

The mean total score (out of 100) is 79, Pain score (out of 25) is 21, Satisfaction - 23, ROM – 18 and finally Grip strength – 16. Coming to Frykman classification of fractures – the commonest is 1(14) followed by 2 and 5 (11 each). No clinical correlation in terms of final outcomes has been identified between Mayo scoring and Frykman classification (Pearsons correlation of -0.073 and p value of 0.98).

**Conclusions:** Overall outcomes from K wire fixation are good to continue with the practice. As known before from previous studies, pain and satisfaction rates are much more higher than the functional rates (ROM/Grip strength). Frykman classification seem to have no relevance in terms of overall outcomes.

## INTRODUCTION

Fracture of the distal radius is a common clinical problem. A key method of surgical fixation is **percutaneous pinning**, involving the insertion of wires through the skin to stabilize the fracture. There has been conflicting evidence with regards to this method of surgical fixation for these fractures. Cochrane review of this procedure (2008) concludes that,

## OBJECTIVES

In this study we aim to evaluate the outcomes in patients who had K wire fixation for wrist fractures over a 2 year period. And, identify a correlation between Frykman scoring and overall outcomes 1 year after K-wire stabilisation.

## METHODS

We reviewed our inpatient, outpatient and surgical records and identified 52 patients who have had K wire fixation for distal radius fracture. All these patients are above 18 years of

age and had the procedure done between May 2009 and May 2011. A retrospective data gathering is done using a standard set of questions (MAYO WRIST SCORE) answered by the patient. 52 patients (53 wrists) had this procedure done with a F to M ratio of 7.6 : 1(46 / 6). The average age is 64 with a range between 24 and 91. Mean age for Women is 64.2 and for Men it is 61.3. One out of these 52 patients is resting in peace and 35 of these rest 51 patients have replied back.

In addition to MAYO scoring, Frykman classification of the fracture has been identified. Frykman classification is validated by a Hand surgeon and the individual grades are correlated with the final and individual Mayo scoring outcomes.

## RESULTS

The mean total Mayo score is 79. The mean pain score is 21, satisfaction 23, range of movement 18 and finally grip

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strength is 16.

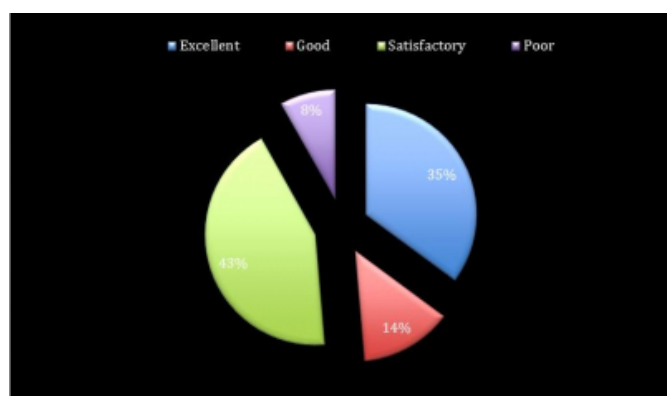
**Table 2**

Total score (out of 100) – 79	Women – 80.1 Men – 62.5
Pain score (out of 25) – 21	Women – 21.1 Men – 17.5
Satisfaction - 23	Women – 24.3 Men – 18.7
ROM – 18	Women – 18.3 Men – 15
Grip strength – 16	Women – 16.6 Men – 11.2

In comparison to women, men had lower mean scores in all categories. 43% of the patient population are satisfied with their outcomes and 35% report they had excellent outcomes. 3 patients had serious complications which needed further surgery. These are - 2 \* ORIF conversions and 1\*Ulnar Osteotomy. Unsurprisingly, these are the patients who had less MAYO scoring.

**Figure 2**

The break down of total score in terms of final outcomes (Mayo interpretation)



Frykman grading of the Fractures revealed following results,

Type 1

### DISCUSSION

The great debate in terms of fixing distal radius fractures by which means still continues. Conservative treatments and operative interventions have their own individual merits and demerits. In this study we once again got closer to recommending that K wire fixation is still a standard straight forward approach which has acceptable overall results. As known before from previous studies, pain and satisfaction rates are much more higher than the functional rates (ROM/Grip strength). Given to the particularly low scores in the functional outcomes, emphasis has to be given to mandatory early physiotherapy

It is generally presumed that higher the Frykman grading of a fracture-worse would be its outcomes. However, in this study we disproved that notion to convincingly conclude that Frykman classification has no role in terms of being a prognostic indicator of outcomes of distal radius fractures particularly in patients with K wire fixation. Male population have relatively lesser MAYO scores in comparison to Female and perhaps might need a lower threshold for ORIF compared to women.

### RECOMMENDATION

A more robust prospective study comparing Age/Gender/Fracture matched patients with Conservative treatment and ORIF.

UK DRAFFT - a randomised controlled trial of percutaneous fixation with kirschner wires versus volar locking-plate fixation in the treatment of adult patients with a dorsally displaced fracture of the distal radius

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