



E-ISSN: 2395-1958  
 P-ISSN: 2706-6630  
 IJOS 2020; 6(1): 50-52  
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 www.orthopaper.com  
 Received: 04-11-2019  
 Accepted: 08-12-2019

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## Study of occurrence of fracture of distal radius in Indian adult population

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**DOI:** <https://doi.org/10.22271/ortho.2020.v6.i1b.1833>

### Abstract

Fractures involving the distal end of radius are one of the frequently encountered injuries in orthopaedics. Conventionally the fractures were treated with closed reduction and immobilization with casts. Even though union of these fractures occurs, it has very high incidence of going in for malunion and joint disability and instability especially those with comminution & intra articular extension. Moreover there is a changing trend in the age group, seen more commonly in the younger age group as a result of Road traffic accidents & trauma, leading to complicated fractures especially with intra articular extension & comminution. Over past few years, the importance of alignment correction, preservation of normal radial length and reconstruction of congruity of Radio carpal and radioulnar joints has been emphasized.

**Keywords:** Distal radius, external fixator, road traffic accidents

### Introduction

**Sample Size:** 20 patients attending the out patient and in patient department of Orthopaedics with fractures of distal end radius fulfilling the inclusion and exclusion criteria during the study period of 2 years from June 2016-may2018

### Objectives

- Distal radius fractures is one of the commonest fractures and seen commonly in day to day life, especially in the elderly indian adult population
- To study the fracture objectives.

### Methodology

Twenty patients with intra-articular fractures of the distal end of radius were treated with external fixator at Navodaya Medical College Hospital and Research Centre, Raichur between June 2016 to May 2018 under Department of Orthopaedics, Navodaya Medical College Hospital and Research Centre, Raichur

### Results

Results Age of the patients ranged from 19 to 60 years with an average age of 37.4 years. Majority of the patients were in the age group of 51 to 60 years. Male patients were aged between 24 to 60 years with an average of 35.5 years. Female patients were aged between 19 to 60 years with average of 49 years.

**Table 1:** Age of the patients ranged from 19 to 60 years with an average

Age (Years)	No	Total Percent
19-30	6	30
31-40	4	20
41-50	3	15
51-60	7	35
Total	20	100

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**Sex Distribution**

Of the total 20 patients treated with retrograde nailing, there were 13 male patients accounting for 65% of the patients and 7 female patients making up the remaining 35%

**Table 2:** Different of male and female patients

Male	13	65
Female	7	35

**Side Affected**

Right side was affected more commonly than left in this study group. Right side was involved in 15 patients making up for 75% of the fractures and left was involved in 5 patients accounting for 25% of the fractures. None had bilateral fractures.

**Table 3:** Right and left side Patients and percentage

Side affected	No of Patients	Percentage
Right	15	75
Left	5	25

**Table 4:** Show the Mechanism of Injury Percentage

Mechanism of Injury	No. of cases	Percentage
Road traffic accident	15	75
Fall from height	5	25
Total	20	100

Seventy six (75%) percent fractures were sustained due to road traffic accidents and fall from height accounted for 25% of fractures. Relationship between Sex and Cause of Fracture.

**Table 5:** Male and female accidents Percent

Sex No	Vehicular accidents Percent	
Male	17	85
Female	3	15
Total	20	100

In males, maximum number of cases (85%) were due to vehicular accidents, where as in females fall from height was the important cause of fracture in this study.

**Type of Fracture:** Out of 20 fractures, only 7 fractures accounting for 35% were open fractures. Rest were closed

**Table 6:** The type of fracture percentage

Type of Fracture	No of Fracture	Percentage
Open	7	35
Closed	13	65

**Type of Open Fracture:** Among the 7 Open Fractures, 4(80%) Were Type II and 3(20%) Were Type III. Of The 7 Cases, 4 were Due To Accidents and Were All Male Patients.

**Table 7:** Types of open fracture

Types of Open Fracture	No of Patient	Percentage
Gustilo type II	4	80
Gustilo type III	3	20

**Type of Fracture Based on Ao Classification:** Out of 20 fractures, type A1 fractures were 07 patients (35%), 11 patients (55%) were type A2 fracture and A3 in 2 patients (10%)

**Table 8:** Fracture Based on Ao Classification

AO Type	No. of Patients	Percentage
A1	7	35
A2	11	55
A3	2	10
Total	20	100.00

**Discussion**

Fractures of the distal end of radius continues to be one of the most common skeletal injuries of the upper limb. These fractures are frequently articular injuries resulting in disruption of both the Radio carpal and distal radio ulnar joints. In our series the majority of the cases of intra-articular fractures of distal end of radius were seen in the younger age group of patients with road traffic accidents [Fall from Motor bike] being the most common. Several authors have stressed that a good functional outcome usually accompanies a good anatomical result. The application of cast in these patients would lead to loss of reduction and a poor functional outcome. In displaced intra articular fractures of distal radius, reduction is easy to achieve but difficult to maintain, due to intraosseous crushing, there is a void at the fracture site which can heal only after collapse, this collapse can be prevented by stabilizing either by packing cortico-cancellous bone graft in the void or by using metal to hold the fracture in place eg. External fixator

**Conclusion**

This study comprised of 20 patients treated with external fixator. Majority of the patients were in the age group of 51-60 years. Males were affected more commonly. Predominantly right side was involved. Road traffic accidents were the common mode of injury. Few (25%) were open fractures, among them 80% were Gustillo type 2 and 20% were Gustillo type 3.

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