

A study of prognosis of hip fractures in different age groups of elderly patients

Sunit Kumar Pal^{1*}, Naresh Kumar², Gargee Yadu Pal³, Anita yadu⁴

¹Assistant Professor, Department of Orthopaedics, Late Baliram Kashyap Memorial Medical College, Jagadalapur, Chhattisgarh, INDIA.

²Assistant Professor Department of Orthopaedics, CCM ,Medical College, Durg, Chhattisgarh, INDIA.

³Ex- PG, Department of Anatomy, Lata Mangeshkar Medical College, Nagpur, Maharashtra, INDIA.

⁴Associated Professor, Department of OBGY, Pt. Jawaharlal Nehru Medical College, Raipur, Chhattisgarh, INDIA.

Email: yammisunit@gmail.com, nresh2013s@gmail.com, palhappy9@gmail.com, shristiyadu@gmail.com

Abstract

Introduction: Throughout the world it is predicted that the total number of hip fractures will increase from 1.26 million in 1990 to 2.6 million by the year 2025 and to 4.5 million by the year 2050. **Aims and Objectives:** To Study prognosis of Hip fractures in different age groups of Elderly patients. **Materials and Methods:** After approval from Institutional ethical committee a cross-sectional study was carried out in the Department of Orthopedic of a Tertiary health care center during the one year i.e. March 2014 - March 2015 in all the Old-age persons (≥ 65) with diagnosis of hip fractures and Operated for it. In the one-year duration there were 85 patients operated for Hip fractures. The statistical analysis was done by Software, SPSS -17 version, depending upon the data, statistical test like One-way ANOVA and Chi-square test was used for statistical significance. **Result:** The majority of the patients were in the age group of 65–74 (Young -old) i.e. 44.70 % followed by 75–84 (Middle-old) - 34.11% and ≥ 85 (old-old) were 21.11%. The majority of the Patients Were Females i.e. 61.18 % and Males were 38.82%. Duration between admission and discharge was significantly higher in the age group of ≥ 85 yrs. Patients as compared to 65-74 yrs. and 75-84 yrs. groups was 72.45 ± 41.63 and 63.9 ± 34.2 and 44.9 ± 40.1 respectively. ($P < 0.05$; One-way ANOVA). In-hospital death were 50.00% in ≥ 85 yrs. 13.79% in 75-84 yrs. age group and 0% in 65-74 yrs. The mortality pattern was significantly higher in ≥ 85 yrs. age group. ($X^2 = 23.65$, $df=2$, $P < 0.00001$). The Ambulation prognosis of the worse in the age group of ≥ 85 yrs. i.e. 55.56% were non-ambulatory followed by 48.27 in 75-84 yrs. age group and 23.68 in 65-74 yrs. age group this observed difference was statistically significant ($X^2=6.87$, $df=2$, $P < 0.05$) **Conclusion:** The prognosis was worse in the ≥ 85 yrs. (old-old) age group in the form of Ambulation, average days of hospitalization and in –hospital deaths so the operative treatment should be specifically intervened with respect to healthstatus.


Keywords: Hip fractures, Problems of Elderly patients, Osteoporosis.

*Address for Correspondence:

Dr. Sunit Kumar Pal, Assistant Professor, Department of Orthopaedics, Late Baliram Kashyap Memorial Medical College, Jagadalapur, Chhattisgarh, INDIA.

Email: yammisunit@gmail.com

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INTRODUCTION

Throughout the world it is predicted that the total number of hip fractures will increase from 1.26 million in 1990 to

2.6 million by the year 2025 and to 4.5 million by the year 2050¹. With the life time risk for a woman of sustaining a hip fracture being greater than that for developing a breast carcinoma^{2,3}, this fracture has gained an important place in terms of monitoring preventive and therapeutic measures for osteoporosis and falls. Earlier studies have reported a higher mortality attributable to the fracture with greater reduction in life expectancy in the younger age group and males compared to patients in the older age group and females^{4,5}. The pattern of hip fracture^{6,7,8} and the risk of social deterioration⁹ are primarily determined by the age of the patient. Mortality associated with hip fractures has been estimated about 5-10% within one month, and around 20%-30% of patients die within one year^{10,11,12}.

MATERIAL AND METHODS

After approval from Institutional ethical committee a cross-sectional study was carried out in the Department of Orthopedic of a Tertiary health care center during the one year i.e. March 2014- March 2015 in all the Old-age persons (≥ 65) with diagnosis of hip fractures and Operated for it. The geriatric population divided into three different age groups i.e. 65–74 (Young -old), 75–84 (Middle-old), ≥ 85 (old-old)*. In the one-year duration there were 85 patients operated for Hip fractures, all detailed clinical history and post- operative prognosis in the form of Duration between admission and discharge, No. of deaths if any and Ambulatory status was recorded. The statistical analysis was done by Software, SPSS -17 version, depending upon the data, statistical test like One-way ANOVA and Chi-square test was used for statistical significance.

RESULT

Table 1: Age wise distribution of the Patients

Age group	No.	Percentage (%)
65–74 (Young-old)	38	44.70
75–84 (Middle-old)	29	34.11
≥ 85 (old-old)	18	21.11
Total	85	100.00

The majority of the patients were in the age group of 65–74 (Young -old) i.e. 44.70 % followed by 75–84 (Middle-old) - 34.11% and ≥ 85 (old-old) were 21.11%.

Table 2: Sex wise Distribution of the Patients

Sex	No.	Percentage (%)
Male	33	38.82
Female	52	61.18
Total	85	100.00

The majority of the Patients Were Females i.e. 61.18 % and Males were 38.82%

Table 3: Distribution of the patients outcome as per age wise

Outcome	65-74 yrs. (n=38)	75-84 yrs. (n=29)	≥ 85 yrs. (n=18)	P-value
Duration between admission and discharge (days, Mean \pm SD)	44.9 \pm 40.1	63.9 \pm 34.2	72.45 \pm 41.63	P<0.05 One way ANOVA
In-hospital death [No. of patients (%)]	0 (0%)	4 (13.79)	9 (50.00)	$\chi^2 = 23.65$. df=2, P< 0.00001.

Duration between admission and discharge was significantly higher in the age group of ≥ 85 yrs. Patients as compared to 65-74 yrs. and 75-84 yrs. groups was 72.45 \pm 41.63 and 63.9 \pm 34.2 and 44.9 \pm 40.1 respectively. (P<0.05; One-way ANOVA). In-hospital death were 50.00% in ≥ 85 yrs. 13.79% in 75-84 yrs. age group and 0% in 65-74 yrs. The mortality pattern was

significantly higher in ≥ 85 yrs. age group. ($\chi^2 = 23.65$. df=2, P< 0.00001).

Table 4: Distribution of the Patients as per Ambulation prognosis

Ambulation prognosis	65-74 yrs. (n=38)	75-84 yrs. (n=29)	≥ 85 yrs. (n=18)	P-value
Ambulatory	29 (76.31)	15 (51.72)	8 (44.44)	$\chi^2=6.87$, df=2,P<0.05
Non-ambulatory	9 (23.68)	14 (48.27)	10 (55.56)	

The Ambulation prognosis of the worse in the age group of ≥ 85 yrs. i.e. 55.56% were non-ambulatory followed by 48.27 in 75-84 yrs. age group and 23.68 in 65-74 yrs. age group this observed difference was statistically significant ($\chi^2=6.87$, df=2, P<0.05)

DISCUSSION

The prognosis of hip fracture is worse with respect to as age; as age increases the general health status is poor it may be because of various associated co-morbidity like osteoporosis, heart disease, lung disease affects the prognosis in the form of ambulation and mortality. Hip fracture is a common injury in the elderly associated with significant morbidity, mortality and disability. Incidence increases with age, and 75% of hip fractures occur in women^{14,15}. About 50% of patients who lived independently before sustaining a hip fracture are unable to regain their independent lifestyle^{16,17,18}. Five to 12% of hip fracture patients discharged to a post-acute care facility were readmitted to the hospital within 6 weeks¹⁹. A hip fracture is a serious injury, with complications that can be life-threatening. The risk of hip fracture rises with age. Older people are at a higher risk of hip fracture because bones tend to weaken with age (osteoporosis). Multiple medications, poor vision and balance problems also make older people more likely to trip and fall-one of the most common causes of hip fracture. A hip fracture almost always requires surgical repair or replacement, followed by months of physical therapy. Taking steps to maintain bone density and avoid falls can help prevent hip fracture²⁰. In our study we have seen The majority of the patients were in the age group of 65–74 (Young -old) i.e. 44.70 % followed by 75–84 (Middle-old) - 34.11% and ≥ 85 (old-old) were 21.11%. The majority of the Patients Were Females i.e. 61.18 % and Males were 38.82% more in female may be because osteoporosis is more common in females. This was similar to Parker M²⁰, Keene GS²¹. Duration between admission and discharge was significantly higher in the age group of ≥ 85 yrs. Patients as compared to 65-74 yrs. and 75-84 yrs. groups was 72.45 \pm 41.63 and 63.9 \pm 34.2 and 44.9 \pm 40.1 respectively. (P<0.05; One-way ANOVA) similar to Tetsuo Hagino²⁴. In-hospital death were 50.00% in ≥ 85 yrs. 13.79% in 75-84 yrs. age group and 0% in 65-74 yrs.

The mortality pattern was significantly higher in ≥ 85 yrs. age group. ($X^2 = 23.65$, $df=2$, $P < 0.00001$) this was similar to Hagino T²², Hasegawa Y²³. The Ambulation prognosis was worse in the age group of ≥ 85 yrs. i.e. 55.56% were non-ambulatory followed by 48.27 in 75-84 yrs. age group and 23.68 in 65-74 yrs. age group this observed difference was statistically significant ($X^2=6.87$, $df=2$, $P < 0.05$) this could be because age related healing and associated co-morbidity affects the restoration of previous health and hence the ambulatory capacity this study was similar to Tetsuo Hagino²⁴.

CONCLUSION

The prognosis was worse in the ≥ 85 yrs. (old-old) age group in the form of Ambulation, average days of hospitalization and in-hospital deaths so the operative treatment should be specifically intervened with respect to health status.

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