

Original Research Article

Clinical Profile of fall in ElderlyDr Shruti S Kolli¹, Dr Anand P Ambali²¹Postgraduate in Department of General Medicine, Shri B. M. Patil Medical College & Research Centre, BLDE University, Vijaypur – 586103²Professor in Department of General Medicine, Shri B. M. Patil Medical College & Research Centre, BLDE University, Vijaypur – 586103***Corresponding author**

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Abstract: India is in a phase of demographic transition. The geriatric population becomes the major area of concern in their health. In elderly, falls result in fracture, disabilities and cause long term illness and mortality. The objective is to study falls in elderly, risk factors, consequences, co-morbid conditions and outcome. Total of 50 patients above 60 years, irrespective of sex with the history of fall admitted, are included in the study conducted for one year duration. Among 50 patients, 28 (56%) are females and 22 (44%) males, of them 68% lie between the age group of 60-74. Hypertension is commonest co-morbidity observed. Repeated history of falls in past is seen in 12% of study group. The common fracture noted is fracture of the femur in 42%, fracture of radius in 20%. Surgical treatment done in 28(56%) patients, 14(28%) managed conservatively. It is observed that females and age group between 60-74years are more at risk of falls in elderly. Falls are directly related to the comorbidities and are prone for repeated falls. Fracture of femur is commonly affected in falls related injuries. Hence awareness regarding preventive measures & proper follow up is necessary.

Keywords: Falls, Elderly, Fracture, Geriatric population

INTRODUCTION

India is in a phase of demographic transition. The geriatric population is growing steadily. It is anticipated to rise about 12.4% in 2026, doubling from 76.6 million in 2006 to 173.1 million in 2026 [1]. As the geriatric population is growing, the major area of concern is their health especially with multiple medical and psychological problems. Falls are one of the major problems in elderly and are considered to be one of the "Geriatric Giants" (immobility, instability, incontinence and impaired intellect/memory) [1].

Falls are multifactorial. Risk factors for falls include,

1. Intrinsic factors: Age related changes cause structural and functional modifications which involves maintaining balance and stability (e.g. standing, walking, sitting), visual acuity, contrast sensitivity, depth perception and dark adaptation decline. In old age, there occurs inability to maintain or recover balance in response to perturbations (e.g. stepping onto an uneven surface). Depression and anxiety, co-morbidities and drugs (psychoactive drugs) are major risk factors for falls.

2. Extrinsic factors: The risk of falls can be increased by the environmental factors independently or by interacting with intrinsic factors. Risk is more when environment requires greater postural control and mobility (e.g. when walking on an uneven and slippery surface) and in unfamiliar environment (e.g. when shifted to a new home)

3. Situational factors: Certain activities or decisions may increase the risk of falls and fall related injuries. e.g. walking with high heels, rushing to bathroom especially night or in inadequate lighting, rushing to answer the telephone, reaching high end objects using stools/stairs and use of staircase.

In addition, the loss of confidence or fear of falling again restricts their activity, referred as the post fall syndrome [2]. Falls and concomitant instability are markers of poor health and declining function. In elderly, a fall may be a non-specific, presenting sign of many acute illnesses, such as pneumonia, UTI or MI or acute exacerbation of chronic illness [3]. Common causes of falls in elderly are accident, environmental

hazards, fall from bed, gait disturbance, balance disorder or weakness, pain related to arthritis, vertigo, acute illness, confusion and cognitive impairment postural hypotension, visual disorder, CNS disorder, syncope, alcohol and drugs like sedative hypnotic and anxiolytic drugs benzodiazepines, tricyclic antidepressants, antihypertensive drugs, cardiac medications, corticosteroids, NSAIDs, anticholinergic drugs, hypoglycemic agents.

AIMS AND OBJECTIVES OF THE STUDY:

To study about clinical profile of falls in elderly, risk factors, consequences, associated comorbid conditions and results.

MATERIALS AND METHODS

1. SOURCE OF DATA:

All the patients above 60 years, irrespective of sex admitted in orthopedics ward in BLDEU’S Shri B.M Patil Medical college Hospital and Research Centre, Vijayapura, prospectively for 1 year from 01/01/2015 to 31/12/2015.

2. METHOD OF COLLECTION OF DATA:

Information was collected through prepared proforma from each patient. History of mode of fall, injuries sustained, previous history of fall, comorbidities, general physical examination and systemic examination were done. Patients were managed conservatively or surgically and the outcome

was noted.

Inclusion criteria:

- Age>60years, irrespective of sex.
- Patients with the history of fall, sustained fracture of minimum one bone.

Exclusion criteria:

- History of road traffic accidents and head injuries.
- History of seizures.
- Fall occurred during the event of stroke.

3. TYPE OF STUDY

Prospective study

4. STATISTICAL ANALYSIS

Data was presented using tables and percentages. Association between the variable was found by Fisher’s exact test.

RESULTS:

Distribution of patients according to age and gender: (Table: 1)

In this study, majority of the patients were between the age group of 60-74 years, which constituted 34(68%). Out of 50 patients, 28(56%) were females and 22(44%) were males.

Table 1: Total number of patients according to age group

Age group	Male	Female	No of patients	Percentage
60-74	17	17	34	68%
75-84	3	9	12	24%
>85	2	2	4	8%

Comorbidities:

Among the comorbid conditions (Table-2), hypertension was most common, observed in 15(30%). Other comorbidities noted were diabetes mellitus in

5(10%), ischemic heart disease in 5(10%), anemia in 5(10%), chronic obstructive pulmonary disease in 2(4%), stroke in 2(4%), Parkinsonism in 2(4%), carcinoma in 1(2%).

Table 2: Distribution of comorbidities

Comorbidities	No. of Patients	Percentages%
HTN	15	30
DM	5	10
IHD	5	10
Anemia	5	10
COPD	2	4
Stoke	2	4
Parkinsonism	2	4
Carcinoma	1	2

DM: Diabetes Mellitus, IHD: Ischemic heart disease, COPD: Chronic obstructive pulmonary disease, HTN: Hypertension.

Out of 50 patients, previous history of falls was observed in 6(12%) patients and it was observed

that all 6 patients had hypertension as comorbidity.

Table-3: Analysis of association between repeated history of fall and hypertension.

Hypertension	Repeated history of fall		Total
	Yes	No	
Yes	6	9	15
No	0	35	35
Total	6	44	50

Statistically there is an association between hypertension and repeated falls (P=0.0003). (Statistically significant if P<0.05) Test- Fisher’s exact test.

Distribution of fracture of different bones according to age group:

The common fracture noted is fracture of the femur in 42%, fracture of radius in 20% followed by

vertebral compression that comprises of 16%. Both radius and ulna fracture was seen in 8%. Other fractures noted were tibia, fibula, humerus, clavicle, calcaneal, and metatarsal bones.

Table 4: Distribution of fracture of different bones according to age group

Age group	Femur	Vertebra Compression	Radius	Ulna+ Radius	Fibula	Tibia+f ibula	Clavi cle	Calca neal	Metatar sal	Hume rus
60-74	13	4	8	4	1	1	1	-	1	1
75-84	5	4	2	-	-	-	-	1	-	-
>85	3	-	-	-	-	1	-	-	-	-

Management of fracture:

Among 34 patients in the age group 60 to 74 years, 21(42%) got operated surgically, 8(16%) were managed conservatively and surgery was refused by 4(8%) patients and one patient was medically not fit to undergo surgery. Among 12 patients between the age

75-84 years, 5(10%) patients were managed surgically and 5(10%) conservatively and two patients refused for surgery and got discharged against medical advice. Out of 4 patients over 85 years, 2(4%) underwent surgery, one was managed conservatively and one patient refused for surgery.

Table: 5: Management of fracture:

Age group	Operated	Not operated	Refused
60-74	21	8	4
75-84	5	5	2
>85	2	1	1

DISCUSSION:

Our study included 50 elderly patients, among 50 patients with the history of fall, 28 (56%) are females and 22 (44%) are males. It is similar to the study done in our hospital in 2011, by Ambali AP, published in Journal of the Indian Academy Of Geriatrics. According to this study females were 65% and males 35% [4].

Another study by Stephen RL, Catherine S, published by Press Syndicate of the University of Cambridge had the similar results of majority being older women than older men [3]. Fracture of femur is the most commonly affected in falls related injuries followed by radius bone fracture and vertebral compression in this study, which is similar to the study by Stephen RL, Catherine S [3] and George FF [2]. Elderly who had history of falls in past is seen in 12% of study group. Second time fall is reported in 20% of patients in the study done by Anand AP, which is seen more in patients with co-morbid conditions [4]. Campbell *et al.*; analyzed a stratified population of aged

65years and over found that 33% experienced repeated falls in one year [5]. Hypertension (30%) was common co-morbid observed followed by diabetes mellitus (10%), ischemic heart disease (10%), anemia (10%) which is found similar to the study conducted by Ambali AP with the hypertension (63.3%) and diabetes mellitus (25.5%) [4].

In this study, 68% lie between the age group of 60-74, 24% between 75-84, 8% patients are >85years age. But the study conducted by George FF, published by American Academy of Family Physician reported the number of falls increases progressively with age, and is seen highest among persons 85years of age and older [2]. Among 50 patients, 28 patients (56%) got operated, 14(28%) were managed conservatively, 7(14%) patients refused for surgery and one patient (2%) was not fit for surgery in this study.

CONCLUSION:

In this study, it is observed that females are more at risk of falls in geriatric age group. Age group

between 60-74years is high risk for falls. Falls are directly related to the co-morbid conditions and they are more prone for repeated falls. Fracture of femur is the most commonly affected in falls related injuries followed by radius bone fracture and vertebral compression. Falls thus result in disability, restriction of activity and fear of falling that in turn can reduce the quality of life and affects independence and leads to an elderly person getting admitted to hospital requiring considerable health care expenditure. Hence educating elderly regarding preventive measures and proper follow up and well control of associated co-morbidities is necessary.

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