

Incidence of one-year mortality following hip surgery in elderly Population: Observational study

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ABSTRACT

Objective: To evaluate the incidence of one year-mortality following hip surgery in elderly population.

Methods: This study conducted from January 2012 to June 2015 and the data was extracted from the patients' data registry.

All patients > 60 years of age underwent surgery for hip fractures (femur neck, trochanteric and sub-trochanteric fractures) from January 2012 to June 2015 in orthopedic surgery department of Liaquat National Hospital were included.

Results: Total of 385 patients operated for hip fractures (femoral neck, trochanteric, sub-trochanteric fractures) during follow up it was found 24 (6.2%) patients were died within 90 days of hip surgery, 57 (14.8%) expired within 6 months and 82 (21.3%) patients could not survived beyond one year after hip surgery.

Cardiovascular disease found to be the leading cause of mortality among these patients 45(56.1%)

Conclusion: –It was observed that higher rate of mortality in elderly population following hip surgery in our target population.

Mesh Word: Proximal Femur Fracture, Mortality, Elderly Patients

INTRODUCTION

Hip fractures are huge concerns among the elderly population due to the associated disability, high morbidity and mortality [1]. Osteoporosis is found to be one of the most common causes of hip fractures in geriatric population [2]. Mortality rates in these patients are also affected by complications following hip surgeries including infections, heart failure and pulmonary embolism [3]. Available data for hip fractures associated with high morbidity and mortality and osteoporosis being the most significant associated factor, to mostly represent the western population, as Asian studies regarding these trends are very rare and with limited sample size [4].

There are many studies regarding mortality after hip fractures and its risk factors and to predict their complications [5]. In comparison to controls high mortality rate has been reported but still this subject has not been discussed or highlighted in many parts of the world [6]. This study is population-based that

presents to our hospital and was aimed to evaluate death by hip fracture type and the mortality rate after hip fractures v/s general population [7].

METHODS

This study was conducted from January 2012 to June 2015 and the data was extracted from data registry of Liaquat National Hospital Karachi. After the approval from scientific and ethical review committees all the patients who were above 60 years of age underwent surgeries for hip fractures (femur neck, trochanteric and sub-trochanteric fractures) were included. Patients with hip fractures secondary to neoplastic or infective pathology of bone were excluded from the study.

Patients were followed in OPD on regular basis for assessment of wound, union and for progressive rehabilitation till one year. Those patients who were lost to follow up were contacted through telephone calls and e-mails. They were investigated about current health and mobility status. Cause of death was also investigated in case of mortalities.

RESULTS

385 patients operated for hip fractures (femoral neck, trochanteric, sub-trochanteric fractures) from January

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2012 to June 2015 were included in the study according to inclusion and exclusion criteria. 250 patients were females. Mean age was 72 years. Trochanteric fracture was the commonest fracture type. Hypertension, Diabetes Mellitus, Ischemic heart disease and Parkinsonism were the co-morbidities encountered in descending order of frequency respectively.

Table 1: Patients' data (n=385)

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|---|------------------|
| Mean age in years (±SD) | 72 (±7.4) |
| Males (%) | 135 (35%) |
| Females (%) | 250 (65%) |
| Type of fracture: n (%) | |
| Neck | 119 (31%) |
| Trochanteric | 187 (49%) |
| Sub trochanteric | 79 (21%) |
| Comorbidities: n (%) | 243/385(63%) |
| Hypertension | 162(67%) |
| Diabetes Mellitus | 141(58%) |
| Ischemic Heart Disease | 54(22%) |
| Parkinsonism | 34(14%) |
| Mortalities after surgery: n (%) | |
| At 3 months | 24(6.2%) |
| At 6 months | 57(14.8%) |
| At 12 months | 82(21.3%) |
| Causes of death: n (%) | |
| Cardiovascular diseases | 45(56.1%) |
| Respiratory complications | 17(20.7%) |
| Gastrointestinal problems | 11(13.4%) |
| Parkinsonism | 5(6.1%) |
| Malignancy | 2(2.4%) |
| Other causes | 1(1.2%) |

After surgery, 24(6.2%) patients died within 90 days of hip surgery, 57 (14.8%) deaths occurred till 6 months, and 82 (21.3%) patients could not survive after one year of hip surgery. The most common cause of mortality was cardiovascular disease (56.1%). Other causes in descending order of frequency were respiratory complications (20.7%), gastrointestinal problems (13.4%), Parkinsonism (6.1%), malignancy (2.4%) and other causes (1.2%).

DISCUSSION

This study is one of the very few institutional-database-based, observational studies regarding hip-fractures from Pakistan representing its incidence and mortality. Due to lack of significant studies over this topic from

Pakistan, studies from Asia were included for further references. In one of the study conducted by Kang et al [4] reported the hip fracture incidence 146.3/100,000 in women compared to men which was 61.72/100,000. In another study by Kim 2010 [[8]. they mentioned the incidence rate of hip fractures to be 174.4/100,000[8]. Lim et al [9] mentioned hip fractures incidence per anum to be 262.8/100,000 in women and 151.8/100,000 in men. Lou et al. [10] gave the incidence rate using the data from four South-East Asian countries (Hong Kong, Malaysia, Singapore, Thailand).

Diam et al. [11] and Richmon 2003 [12] and Hagino 2005 [13] from Ustria and Japan respectively, showed the downward trend in incidence rate of hip fractures from 1984 to 2003. All of the above studies have mentioned lower incidence rate of hip fractures then our study. Studies from Norway by Bacon 1993 has mentioned higher incidence rate than our study. This study also showed the crude mortality rate in our population over 60 years of age at 1 year post surgery for hip fractures to be 21.3% (13.1% in women and 7% in men). Factors affecting the crude mortality rate can vary from country to country, like heterogeneity of population regarding their age, health status before fracture, financial assistance and psychological behavior regarding injury and rehabilitation.

The pros of the study are that it touches a sensitive area of concerns regarding 1year-mortality after hip fracture surgeries in our region. Highlights the need for developing a data-base of cause related morbidities and mortalities on a national level. It is a study from a renowned tertiary care hospital of Karachi.

CONCLUSION

We observed higher rate of mortality in our elderly population within 1 year of hip surgery. Lack of social awareness, illiteracy and knowledge regarding postoperative care and rehabilitation protocol along with less effective post-operative nursing care and loss to follow-up after discharge in majority of cases. All of these factors contribute to increases the mortality in elderly population following hip surgery.

Here we would like to propose an idea of developing a national registry of cause related morbidity and mortality so we can achieve standard and authentic data recording by which we can contribute in improving public social awareness, nursing care and control of risk factors associated with

following hip fractures in elderly population of our country.

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