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Original Article

Comorbidities, clinical intercurrences, and factors associated with mortality in elderly patients admitted for a hip fracture☆

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ABSTRACT

Objective: To analyze comorbidities and clinical complications, and to determine the factors associated with mortality rates of elderly patients admitted with a hip fracture in a tertiary public hospital.

Methods: Sixty-seven medical records were reviewed in a retrospective cohort study, including patients equal to or older than 65 years admitted to this institution for hip fracture between January 2014 and December 2014. The evaluated items constituted were the following: interval of time between fracture and hospital admission, time between admission and surgical procedure, comorbidities, clinical complications, type of orthopedic procedure, surgical risk, cardiac risk, and patient outcome.

Results: The average patients' age in the sample was 77.6 years, with a predominance of the female gender. Most patients (50.7%) had two or more comorbidities. The main clinical complications during hospitalization included cognitive behavioral disorders, respiratory infection and of the urinary tract. The times between fracture and admission and between admission and surgery were more than seven days in most of cases. The mortality rate during hospitalization was 11.9%, and was directly connected to the presence of infections during hospital stay ($p = 0.006$), to time between admission and surgery longer than seven days ($p = 0.005$), to the Goldman Cardiac Risk Index class III ($p = 0.008$), and to age equal to or greater than 85 years ($p = 0.031$).

Conclusion: Patients with hip fractures generally present comorbidities, are susceptible to clinical complications, and have an 11.9% mortality rate.

☆ Study conducted at Faculdade de Ciências Médicas e da Saúde de Sorocaba, Pontifícia Universidade Católica de São Paulo, Sorocaba, SP, Brazil.

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Comorbidades, intercorrências clínicas e fatores associados à mortalidade em pacientes idosos internados por fratura de quadril

Palavras-chave:
Idosos
Fraturas do quadril
Cirurgia ortopédica

RESUMO

Objetivo: Analisar as comorbidades e as intercorrências clínicas e determinar os fatores associados à mortalidade de pacientes idosos internados por fratura de quadril em um hospital público de atenção terciária.

Métodos: Neste estudo coorte retrospectivo, foram revisados 67 prontuários médicos de pacientes com idade igual ou maior que 65 anos, admitidos em nossa instituição por fratura de quadril, no período entre janeiro a dezembro de 2014. Foram avaliados os intervalos de tempo entre a fratura e admissão hospitalar e entre essa e o procedimento cirúrgico, o tempo total de internação, a presença de comorbidades, as intercorrências clínicas, o tipo de procedimento ortopédico adotado, o risco cirúrgico, o risco cardíaco e o desfecho de alta.

Resultados: A média de idade foi de 77,6 anos, com predominância do sexo feminino (64,1%). A maioria dos pacientes (50,7%) tinha duas ou mais comorbidades. As principais intercorrências clínicas durante a internação foram distúrbios cognitivo-comportamentais e infecções respiratórias e do trato urinário. Os intervalos de tempo entre fratura e internação e entre essa e a cirurgia foram superiores a sete dias na maioria dos casos. A taxa de mortalidade durante a internação foi de 11,9% e esteve diretamente vinculada à presença de infecções no período hospitalar ($p = 0,006$), ao intervalo de tempo entre a internação e a cirurgia superior a sete dias ($p = 0,005$), ao escore de Goldman igual a III ($p = 0,008$) e à idade igual ou superior a 85 anos ($p = 0,031$).

Conclusão: Pacientes com fraturas do quadril geralmente apresentam comorbidades, estão predispostos a intercorrências clínicas e têm uma taxa de mortalidade de 11,9%.

Introduction

A significant increase in the life expectancy of the population has been observed both in Brazil and worldwide; this has triggered a higher prevalence of chronic and degenerative diseases. According to the Brazilian Institute of Geography and Statistics (IBGE), the current elderly population in the country reaches approximately 15 million; estimates for the next 20 years indicate that it could exceed 30 million when it will represent almost 13% of the population.[1]

Balance and gait depend on a complex interaction between nerve, musculoskeletal, cardiovascular, and sensory functions, as well as the ability to quickly adapt to environmental and postural changes. Balance control changes with age and causes gait instability, which, together with the interaction of various environmental and individual factors, may result in falls.[2]

The 2008 guidelines of the Brazilian Society of Geriatrics and Gerontology indicate that approximately 5% of fall episodes trigger fractures, the most common of which are vertebral fractures and those of the femur, humerus, distal radius, and rib cage. Femoral fractures can be observed in the proximal, distal, or femoral diaphysis; in most cases, these fractures have serious consequences on the physical capacity and longevity of the patients. Since bone is able to transmit a load during motion, fractures cause a loss of bone structural integrity, which hinders the effectiveness of movement.[2]

It is estimated that one in three women and one in 12 men will experience this type of fracture (whether intertrochanteric or of the femoral neck), and 86% of the cases occur in people aged 65 years or older. A 15–20% reduction in the life expectancy of individuals with fractures can be expected, as the relative risk of mortality in these patients increases by 4% per year.[3,4]

Osteoporosis, sensory deficits caused by a stroke, dementia, muscular hypotrophy, decreased visual acuity, altered balance and reflexes, muscle weakness, neurological disorders, cardiovascular disorders, and osteomyoarticular deformities are predisposing conditions to falls and, consequently, fractures. Regarding mortality due to hip fracture, other preoperative factors, identified at the patient's admission, are associated with an increase in this index, namely: being nonwhite, age, the presence of dementia, male gender, clinical comorbidities, and delirium.[5]

Clinical comorbidities, apart from being an important risk factor for higher mortality, are also associated with the onset of immediate or late postoperative complications. Immediate complications include shock, fatty embolism, compartment syndrome, venous thromboembolism, pulmonary embolism, disseminated intravascular coagulation, and infections. Late complications include delayed consolidation, malunion, pseudoarthrosis, avascular necrosis of the bone, reaction to internal fixation devices, and reflex sympathetic dystrophy.[6]

In addition to complications in the postoperative period, the motor disability triggered by falls and fractures in the elderly can lead to immobility, with several consequences