



TITLE: Osteoporotic hip fracture — Comorbidities and factors associated with in-hospital mortality in the elderly: A nine-year cohort study in Brazil

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ABSTRACT

The aim of the real-life study was to identify factors associated with the causes of in-hospital morbidity and mortality in an elderly Brazilian population due to osteoporotic hip fracture. Method: Retrospective cohort study involving a population over 60 years old hospitalized for osteoporotic hip fracture and followed up from admission to outcome (discharge or mortality) from 2010 to 2018, in a public health hospital in Brasília, capital of Brazil. Multivariate analysis was performed using the Poisson regression model with robust variance, observing the proposed hierarchical model and the receiver operating characteristic (ROC) curve to obtain the cut-off point for the incidence of mortality in relation to the total length of hospital stay. The level of significance was set at $p < 0.05$. Analyses were performed using SAS 9.4 software. Result: The mean in-hospital mortality rate among the 402 patients involved was 18.4%, and the associations made with the mortality outcome were by relevance: respiratory infection, age over 90 years, high preoperative cardiovascular risk, pulmonary disease chronic obstructive disease (COPD) as a comorbidity, serum hemoglobin level less than 10 and other infections. Mortality was also associated with longer total hospital stay, as well as with prolonged

postoperative period. Conclusion: Hip fractures in the elderly due to osteoporosis indicate a relationship between the sicker profile of the older population and the prevalence of chronic diseases strongly associated with nosocomial infections, contributing to increased mortality. Compared to the international literature, there are fewer early interventions, although mortality has been associated with prolonged postoperative period. The aim of this study was not to compare independent variables with each other, but to suggest the relationship between the presence of comorbidities, which predisposes to the development of infections, directly linked to mortality, which needs to be considered in this pathology.

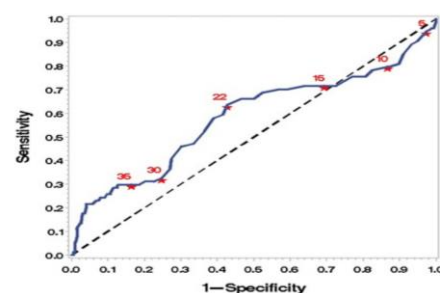


Fig1: Cutoff point for mortality from the 22nd day of the total length of hospital stay. ROC (curve area 0.5816; 95% IC 0.4998–0.6634).

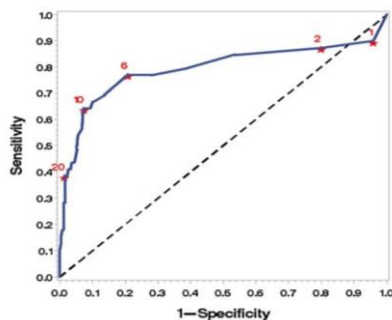


Fig.2: Cutoff point for mortality from the sixth day on for the postoperative period. ROC (curve area 0.7922; 95% IC 0.6884–0.8959).

BIOGRAPHY

Viviane Peterle completed her master's and PHD at the University of Brasília, Brazil, in the areas of medical pathophysiology with an emphasis on osteometabolism and public health. She leads a research group carrying out unprecedented studies in Brazil with triangulation of methods warning about fractures as a result of Osteoporosis in the elderly in fragile health conditions, a situation prevalent in a population undergoing rapid demographic transition and aging such as Brazil. Professor at the University of Public Health in the Capital of Brazil, she coordinates scientific initiation and Post-Graduate Medical Residency work among medical students and resident physicians applying evidence-based science closer to the Community. Since 2019 she has been the Executive Secretary of the National Commission for Medical Residency of the Ministry of Education, government of Brazil.

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