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RESEARCH

Mortality in orthopedic patients: a retrospective review of 333 medical records

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Abstract

Background The burden of orthopedic admissions has notably increased in recent years. Managing orthopedic conditions is challenging in clinical settings. Orthopedic complaints often necessitate urgent medical intervention to prevent complications and mortality. Despite advancements in medical care, some patients still experience severe complications, extended hospital stays, and death following orthopedic admission. In this study, we aimed to explore the distribution of potential risk factors and common patterns in orthopedic patients who died during their hospitalization.

Materials and Methods All the patients who were admitted to three tertiary trauma centers with orthopedic complaints from 2010 to 2023 and died during hospitalization were enrolled in this study. Demographic, injury-related, laboratory-related, intervention-related, complication-related, and healthcare-related data were extracted using the patient's medical records. Descriptive analysis of the collected data was performed using the SPSS version 27 software.

Results 333 patients who died in the hospital with orthopedic complaints were included in the study and examined. The mean age of patients in this study was 67.89 years, comprising 68% males and 32% females. Trauma was patients' most common clinical cause of admission (63.7%). The prevalence of death before surgery, death during the first 24 h after surgery, and death after 24 h postoperatively were 26.4%, 18.6%, and 55%, respectively.

Conclusions Our findings suggest a high prevalence of trauma as a clinical complaint leading to death among patients, emphasizing the importance of developing an integrated protocol for trauma preventive strategies.

Keywords Death · Inpatient mortality · In-hospital mortality · Trauma · Orthopedic injury

Introduction

The International Classification for Patient Safety defines an adverse event (AE) as any healthcare-related consequence that causes harm to patients, with a prevalence of 10.5% and a cumulative incidence of approximately 20% in hospitalized individuals [1]. AEs increase the duration of hospital stays and are associated with higher in-hospital mortality rates [2–4]. In-hospital death is a pivotal factor in determining the quality and effectiveness of hospital care and is an indicator of the severity of the patient's injury [5, 6]. The overall prevalence of in-hospital mortality has been estimated to be close to 5% [5]. However, receiving inadequate and unsafe care could increase the mortality rate to 10% [7, 8]. Several studies have proposed various models to describe patient characteristics, surgical techniques, imaging modalities, and types of sutures used in mortality cases during hospitalization [9–15]. These studies indicate that in-hospital mortality is affected by a wide range of factors and should be evaluated while considering potential confounders, including individual and clinical patient factors, as well as hospital-related factors [13].

According to the World Health Organization (WHO) report in 2015, musculoskeletal injuries accounted for less than 5 million deaths worldwide, comprising 16% of the global disease burden [16]. Orthopedic surgeries involve numerous complications encompassing respiratory failure, cardiovascular events, kidney dysfunction, pain-related injuries, and death have been discovered to be associated with orthopedic surgeries, mainly in the older population. The

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