

The epidemiology of spinal fractures in a level 2 trauma center in Kuwait

SAGE Open Medicine

Volume 9: 1–11

© The Author(s) 2021


Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/20503121211051932

journals.sagepub.com/home/smo



Meshal Alhadhoud¹ and Najla Alsiri² 

Abstract

Objectives: Spinal fractures are a public health issue with high morbidity and mortality, and significant social and economic impact. The burden of disease can be minimized through effective management and preventive strategies based on basic epidemiological figures. Therefore, this study aimed to establish the epidemiological figures for traumatic injuries of the spine, including prevalence and associated risk factors in Kuwait, one of the high-income countries in the Middle East region.

Methods: Using a retrospective design, the Orthopedic Admission Database of level II trauma center was reviewed from January 2018 to February 2020 for traumatic spinal fractures.

Results: The study included 564 patients with 788 fractures, and from this sample, 162 patients sustained vertebral fractures at 181 different vertebral anatomical areas, resulting in 28.72% prevalence rate for spinal fractures; the mean age was 37.10 (SD = 18.25) years old; 79.2% were men, and 57.8% were Kuwaitis. The most prevalent mechanism of injury was road traffic accidents at 54.5%, and the lumbar spine was the most prevalent fracture site, followed by the thoracic spine at 47.5% and 31.5%, respectively. The mortality rate associated with spinal fractures is 42.10% from trauma cases admitted to the intensive care unit. Patients' sex, nationality, fracture anatomical site, and the mechanism of injury were identified as risk factors ($p < 0.05$).

Conclusion: The established epidemiological figures for spinal fractures can be used to direct management and preventive strategies and assist health care planning and delivery.

Level of Evidence: III

Keywords

Fractures, prevalence, spine

Date received: 3 May 2021; accepted: 20 September 2021

Highlights

- The epidemiology of spinal fractures has been studied in the Middle East region in a middle-income countries.
- The current study has established essential epidemiological figures for spine fractures in the Middle East region in a high-income country.
- The established epidemiological figures for spine fractures can effectively direct future management and preventive plans and strategies.

Introduction

Spinal fractures are considered a major public health issue due to their high morbidity and mortality rates, with significant socioeconomic burden.^{1–4} More than 10% of the trauma patients that sustained spinal injuries was as a result of road traffic accidents (RTAs) among the younger population, and

from low-impact falls in the older population.⁵ The global incidence of traumatic spinal fractures is 10.5 cases per 100,000 persons, with an estimated 768,473 new cases annually worldwide.⁶ The 1-year cost for spinal accidents has been estimated to be EUR 22 million, mainly resulting from medical and related costs of productivity loss due to death or disability.^{7–11} The complexity of spinal fractures is related to their significant association with neurological injuries, osteoporosis, and aging, resulting in poor functional outcomes and significant quality of life impairment.^{3,4} It has been

¹Al Adan Hospital, Al-Ahmadi, Kuwait

²Al-Razi Orthopaedic and Rehabilitation Hospital, Kuwait City, Kuwait

Corresponding author:

Najla Alsiri, Al-Razi Orthopaedic and Rehabilitation Hospital, Jamal Abdalnaser street, P.O. Box: 5, Kuwait City, 13001, Kuwait.

Email: dr.alsiri@outlook.com



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons

Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).