

A RETROSPECTIVE STUDY OF GERIATRIC TRAUMA AT A LARGE TEACHING HOSPITAL AFTER THE 2008 WENCHUAN EARTHQUAKE

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SUMMARY

Background: On May 12, 2008, a large earthquake measuring 8.0 on the Richter scale struck Wenchuan County, Sichuan Province, China. To date, there has been no report specifically addressing the clinical features of traumatized geriatric patients in the earthquake. The objective of this study was to review the characteristics of injuries among aged inpatients and provide some experiences of emergency management for traumatized geriatric patients.

Methods: Medical records of earthquake-related geriatric inpatients in West China Hospital were reviewed retrospectively.

Results: Of the 1,856 inpatients, 400 (21.6%) were ≥ 65 years old. Extremity, trunk and head injuries were present in 240 (60.0%), 102 (25.5%), and 37 (9.2%) patients, respectively. Fracture (68.5%, $n=274$) was the most common type of injury. The mortality of earthquake-related geriatric patients was 4.8%, which was higher than that of all earthquake-related patients.

Conclusion: Fracture was the most common type of trauma and the extremities were the predominant sites among geriatrics after the Wenchuan earthquake. The mortality of elderly inpatients was higher than that of other age groups. Considering the difficulty and complexity of managing patients with earthquake-related injuries, a multidisciplinary team of physicians should be organized as soon as possible after an earthquake. [International Journal of Gerontology 2010; 4(3): 115–119]

Key Words: earthquakes, geriatrics, wounds and injuries

Introduction

On May 12, 2008 at 14:28, a large earthquake measuring 8.0 on the Richter scale struck Wenchuan County in the Sichuan Province of China. According to official records, the earthquake led to 69,226 deaths, 379,640 injuries,

and approximately 17,939 people reported missing. The severity and scale of this earthquake had seldom been seen in China or elsewhere in the world. Injured patients were sent to several hospitals in nearby cities.

Of injured victims, aged people are more vulnerable, and have a higher risk of death because they usually also suffer from primary diseases¹. Until now, no articles have specifically addressed the clinical features of traumatized geriatric patients in the earthquake. West China Hospital of Sichuan University, as the only large-scale and state-level general teaching hospital in the earthquake-affected area, received the vast majority of patients hospitalized with earthquake-related injuries (a total of 2,728 cases, 872 were treated in the



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emergency department and 1,856 were hospitalized) up until 23 July, 2008². The purpose of this study was to review the clinical characteristics of aged inpatients in the hospital, and provide some experiences of emergency management of traumatized geriatric patients.

Patients and Methods

Informed consent was not necessary for this study which used existing data. The Institutional Review Board of West China Hospital in Sichuan University approved this study.

We retrospectively reviewed the medical records of earthquake-related geriatric inpatients (defined as ≥ 65 years old) who were transferred to our hospital after the earthquake. The following information was extracted: (1) age; (2) gender; (3) date of admission; (4) diagnosis; (5) location of injury; and (6) type of injury. Locations of injuries were classified as: (1) extremity; (2) trunk; (3) head; and (4) others. Injuries to the extremities were further categorized as: fracture, joint injury, amputation, and minor trauma. Trunk injuries included fracture, visceral injury, and minor trauma. Head injuries constituted craniocerebral injury, skull fracture, ocular injury, and minor trauma. To clarify, minor trauma was defined as soft tissue injury, laceration, or superficial injury. Visceral injury referred to injury to organs in the body cavity and included pneumothorax, hemothorax, and contusion of the lung, spleen or kidney. Craniocerebral injury was defined as injury to the brain, including cerebral hemorrhage, brain contusion, brain infarction and aphasia. Fracture, visceral injury, and craniocerebral injury were diagnosed using computerized tomography scanning or magnetic resonance imaging, along with clinical symptoms. In this study, patients with multiple injuries were counted separately for each type of injury.

Statistical analyses were performed using descriptive methods and SPSS version 15.0 (SPSS Inc., Chicago, IL, USA). Categorical variables are presented as frequencies and percentages, and continuous variables as mean, standard deviation (SD) or median values.

Results

Of the 1,856 inpatients transferred to our hospital, 400 (21.6%) were geriatric patients, 166 (41.5%) male and

234 (58.5%) female, with a mean age of 76.57 years (range, 65–103 yr; median, 84 yr).

The extremities were the most common location of injury (60.0%, $n=240$), followed by the trunk (25.5%, $n=102$) and head (9.2%, $n=37$) (Figure 1). Fracture accounted for 68.5% ($n=274$) of the injuries in the elderly patients, followed by minor trauma (9.2%, $n=37$), and craniocerebral injury (6.2%, $n=25$); 20 (5.0%) developed infection (7 had gangrene). Of the fractures, 70.8% occurred in the extremities, 15.3% in the spine, and 8.8% in the ribs (Figure 2).

Of those patients with injuries to the extremities, 194 (80.3%) had fractures, 25 (10.4%) had minor trauma, and 10 (4.2%) were transferred to our hospital after amputation. Of these injuries, 179 (74.6%) and 66 (27.5%) occurred in the lower and upper extremities, respectively.

Of those patients with trunk injuries, 82 (80.4%) had fractures, while 22 (21.6%) had visceral injury and 4 (3.9%) had minor trunk trauma. Spine fracture accounted for the largest proportion (41.2%, $n=42$) of the trunk fractures. Thoracic visceral injury was the most common type (18.6%, $n=19$) among visceral injuries (Table). Of the 42 patients with spine fracture, 20 (47.6%) occurred in the lumbar spine, 10 (23.8%) in the thoracic spine, 6 (14.3%) in both thoracic and lumbar spine, and 4 (9.5%) in the cervical spine. The remaining two patients' (4.8%) injury sites were not clear.

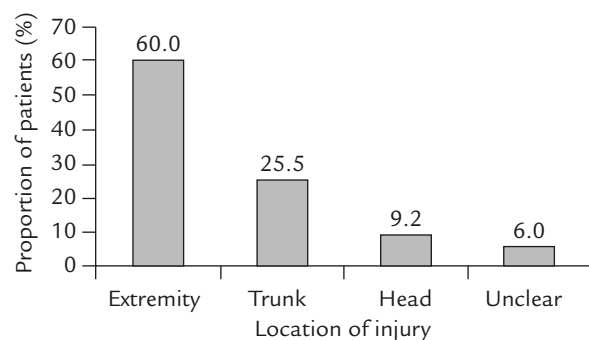


Figure 1. Location of injuries.

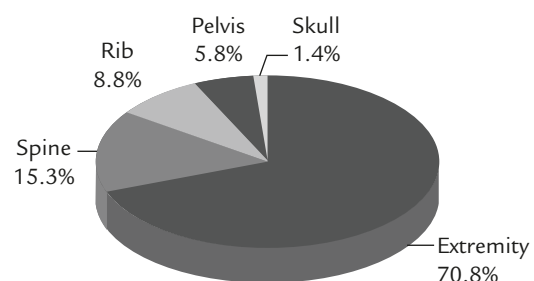


Figure 2. Location of fractures.

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