A Comparison between Bedside Ultrasound and Radiography in Diagnosis of long bone fracture in traumatic patients presenting emergency department

Gholipour C, MD, Rajai Ghafouri R, MD, Shahab Moghadam R, MD, Tarzamani M.R, MD.

Emergency Medicine Department, Imam Reza Hospital, Faculty of Medicine, Tabriz University of Medical Sciences

Introduction: Fracture is one of the most common causes of emergency department referring and often its detection dose in traumatic patients with X-Ray in emergency. Emergency bedside ultrasound can be helpful as a good modality in detection of fractures. The purpose of this study was to compare ultrasound and radiography in the detection of long-bone fractures was performed.

Methods: In this study, ١٢٨ traumatic patients admitted to the emergency ward of Imam Reza Hospital, were enrolled. After performing bedside ultrasound and record the results in the form, X-Ray (Gold standard diagnosis of limb fractures) was performed to confirm the diagnosis. Then the data collected were analyzed.

Results: The results of this study showed that the sensitivity and specificity of ultrasound in the diagnosis of fractures of the arm ٨٤.٣٨% and ٩٣.٧٥%, forearm ٨٨.٥٧% and ٩٢.٤٧%, thigh ٨٨.٣٧% and ٩٢.٩٤% and leg was ٨٨.٨٩% and ٩٠.٥٤%. PPV and NPV was ٨٦.٣٦% and ٩٤.٠٥% in thigh, ٨١.٥٨% and ٩٥.٥٦% in forearm, ٨١.٨٢% and ٩٤.٧٤٪ in arm and ٨٧.٢٧% and ٩١.٧٨% in leg.

Conclusion: according to the results demonstrated that ultrasound has the high sensitivity and specificity in detection of bone fracture and can replace with X-Ray in emergency department.

Keywords: bedside sonography, fracture, emergency.