

Diagnostic Accuracy of Physical Examination and History Taking in Traumatic Rib Fracture; A Single Center Experience

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Abstract

Objective:

To evaluate the diagnostic accuracy of history taking and physical examination in the patients with traumatic rib fractures.

Methods:

In a cross-sectional study, all patients with multiple traumas who referred to the emergency department were evaluated for the mechanism of injury, chief complaints, vital signs and oxygen saturation. History taking and physical examination were performed according to Barbara Bates reference. Fracture was diagnosed based on chest x-ray results and CT scan, if needed. The results were analyzed by receiver operating characteristic (ROC) curves and area under the curve (AUC) analysis.

Results:

Isolated rib fractures of thoracic bones were found in 8 out of 99 subjects with mean age of 33.4 ± 19.43 years. In the sensitivity analysis of history taking and physical exam tests, the highest sensitivity was chest tenderness and deformity with 100% sensitivity for each one and the lowest was for the dyspnea with 28.10%; however, the highest sensitivity was for dyspnea with 62.50% sensitivity; and pulmonary hearing aid and chest deformity were not specific (0%). For heart rate, AUC analysis was significant. Heart rate above 80/min was associated with 87.5% sensitivity and 62.5% specificity for rib fractures.

Conclusion:

Proper and physical examination and history taking can help to detect rib fractures with high sensitivity and specificity denoting to the importance of the issue; while, radiographic or surgical approval is required to diagnose rib fractures.

Key Words: Physical examination, Rib fracture, Sensitivity, Specificity
