Diagnostic Accuracy of Cincinnati Pre-Hospital Stroke Scale

Behzad Zohrevandi, Vahid Monsef Kasmaie, Payman Asadi*, Hosna Tajic, Nastaran Azizzade Roodpishi
Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran
*Corresponding Author: Payman asadi; Road trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran
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Abstract Introduction: Stroke is recognized as the third cause of mortality after cardiovascular and cancer diseases, so that lead to death of about 5 million people, annually. There are several scales to early prediction of at risk patients and decreasing the rate of mortality by transferring them to the stroke center. In the present study, the accuracy of Cincinnati pre-hospital stroke scale was assessed.

Methods: This was a retrospective cross-sectional study done to assess accuracy of Cincinnati scale in prediction of stroke probability in patients referred to the emergency de-partment of Poursina Hospital, Rasht, Iran, 2013 with neurologic symptoms. Three criteria of Cincinnati scale in-cluding facial droop, dysarthria, and upper extremity weakness as well as the final diagnosis of patients were gath-ered. Sensitivity, specificity, predictive values, and likelihood ratios of Cincinnati scale were calculated using SPSS version 20.

Results: 448 patients were assessed. The agreement rate of Cincinnati scale and final diagnosis was 0.483 ± 0.055 (p<0.0001). The sensitivity of 93.19% (95% CI: 90.11-95.54), specificity of 51.85% (95% CI: 40.47-63.10), positive predictive value of 89.76% (95% CI: 86.27-92.62), negative predictive value of 62.69% (95% CI: 55.52-72.45), positive likelihood ratio of 1.94% (95% CI: 1.54-2.43), and negative likelihood ratio of 0.13% (95% CI: 0.09-0.20) were calculated.

Conclusion: It seems that pre-hospital Cincinnati scale can be an appropriate screening tool in prediction of stroke in patients with acute neurologic syndromes.

Key words: Stroke; decision support techniques; facial paralysis; dysarthria; early diagnosis