Comparative evaluation of Wide QRS Interval and R Changes in Avr Lead in Predicting Severe Complications of Tricyclic Antidepressant Poisoning

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ABSTRACT

Background: Tricyclic antidepressants (TCAS) Poisoning is the most common poisoning in the Poisoning Emergency Department of Noor Hospital, Isfahan, Iran. The objective of this study was to compare QRS interval duration with RaVR\(\geq 3\)mm and R/SaVR\(\geq 0.7\) in predicting: serious complications of acute TCA toxicity.

Methods and Materials: This study was descriptive – analytic and prospective cohort. TCA poisoned patients (155 cases) were evaluated in the Emergency Department of Noor Hospital, Isfahan. On admission time, ECG and ABGs were done. Data were analyzed by SPSS Software, using t – students and chi-square tests.

Results: The ECG results showed that frequency of RaVR\(\geq 3\)mm, R/SaVR\(\geq 0.7\), QRS\(\geq 0.1\)s, QT\(>0.48\)s, Right axis deviation and arrhythmia were 5.2%, 12.9%, 37.4%, 8.38%, 12.4% and 4.5% respectively. There was a significant relationship between widening of QRS with arrhythmia; RaVR\(\geq 3\)mm with tachycardia and delirium; and R/SaVR\(\geq 0.7\) with delirium, seizure, tachycardia, hypotension and arrhythmia. QRS interval duration (61.5% -85.7%) was found to be a more sensitive indicator of toxicity than the R/SaVR \(\geq 0.7\) (27.1% -30.7%) and RaVR>3mm (7.6% -14.2%). The positive productive values (PPV) of ECG parameters for TCA toxicity for R/SaVR \(\geq 0.7\) (20%) was more than RaVR\(\geq 3\)mm (12.5%) and widening QRS (10.3%).

Conclusion: Specific ECG parameters such as R/SaVR, QRS interval duration and height of the R wave in lead aVR can be useful parameters in assessing and predicting cardiac and CNS complication of TCA toxicity.

Key words: Tricyclic Antidepressants, Widening QRS Toxicity, RaVR Modifications.

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