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Correlation between sinus bradycardia and development of heart blocks in acute oleander poisoning: An interim analysis of a study done in Sri Lanka.

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Objective

Objective was to determine whether development of sinus bradycardia within 24 hours of acute yellow oleander poisoning is associated with development of heart block.

Method

A prospective cross-sectional study was carried out at Teaching Hospital Batticaloa, Eastern Province - Sri Lanka, among patients admitted with acute yellow oleander poisoning. The inclusion criteria were presence of bradycardia (<60 beats per minute), systolic blood pressure <80mmHg or symptoms such as nausea, vomiting, abdominal pain, diarrhea, xanthopsia. If any one of the above signs were present, patients were recruited in the study within 2 hours of admission. Serial ECGs were taken on admission and every 4 hourly for 24 hours. Demographic data were presented as percentages. Chi-Square test was performed to find the association between sinus bradycardia and development heart blocks using Statistical Package for Social Sciences SPSS version 25. Ethical Clearance for this study was granted by Ethics Review Committee of the Faculty of Medicine, University of Sri Jayewardenepura.

Results

Fifty-one consenting patients were recruited according to the inclusion criteria from 1st July 2022 to 30th September 2022. 78.43 % (40) of the patients were males. Mean age of the patients was 25.54 (SD +/- 9.88) and mean ingestion to admission time was 4.5 (SD +/-1.10) hours. 45.09 % (23) have ingested oleander seeds with sugar as a co-ingestion and 21.57% (11) with alcohol. 49% (25) patients developed bradycardia, 11.8% (6) developed first degree heart block, 7.84% (4) developed second degree heart block and 3.9 % (2) developed third degree heart block. Temporary cardiac pacing was done in 7.8% (4) patients and 1.96 % (1) died due to cardiac arrest. Incidence of non-bradycardia patients who developed heart block was 11.53% while incidence of bradycardia patients who developed heart block was 36%. Development of bradycardia within 24 hours of admission was associated with development of heart block (p = 0.013463). Relative risk for development of heart blocks was 3.1200 (95% CI) in patient who developed bradycardia.

Conclusion

There is an association between development of bradycardia and development of heart blocks in acute yellow oleander poisoning. Bradycardia within 24 hours of ingestion is an early predictor of development of heart blocks in acute yellow oleander poisoning. Due to the high risk of development of heart blocks, patients with bradycardia should be closely and continuously monitored. They need to be treated at tertiary health care setting where facilities available for temporary cardiac pacing.