

ORIGINAL RESEARCH

A Study on Electrocardiographic Changes in Acute Yellow Oleander Seed Poisoning

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Type of Study: Original Research Paper

Date of Acceptance: 14 December 2022

Date of Publication: January 2023

ABSTRACT

Background: Oleander plants are widely available in our country. Most parts of the plants are toxic in one or another way based on their active constituents. Among all oleanders yellow oleander is more poisonous. Consumption of yellow oleander seeds causes cardiac toxicity due glycoside content. This leads to electrocardiographic (ECG) changes ranging from blocks to fatal arrhythmias. Aim: To study the various electrocardiographic changes that occurs in acute yellow oleander seed poisoning.

Methods: 100 consecutive patients of acute yellow oleander seed poisoning above 18 years of age admitted at Government Dharmapuri Medical College were included in the study during the period of January 2021 to June 2022. It was a observational prospective study. Patients were selected by predetermined inclusion and exclusion criteria and were followed up during inpatient period. Results: Out of 100 patients 41 patients had electrocardiographic abnormalities. Sinus bradycardia was the commonest abnormality followed by first degree heart block. We had one mortality due to ventricular tachycardia.

Results: ?.

Conclusion: Acute yellow oleander seed poisoning shows wide spectrum of ECG changes. The electrocardiographic abnormalities are more in those who consumed more seeds. So it is important to closely observe these patients. Serial ECG is mandatory in these patients to identify the electrocardiographic abnormality early and to treat accordingly. As some complications can even occur late, it is better not to discharge these patients prematurely.

Keywords: Acute yellow oleander seed, Electrocardiographic changes

INTRODUCTION

The oleander is an ornamental plant which is grown in most parts of India. It is the commonest plant poison reported in India. Among all oleanders yellow oleander causes more morbidity and mortality. Dry oleander seeds when crushed and taken are more poisonous. The oleander seeds

contain cardiac glycosides which are responsible for cardio toxicity. It can cause many electrocardiographic (ECG) abnormalities like sinus bradycardia, AV block, SA exit block, and ventricular arrhythmias. Previously it was suggested lethal dose is four to seven seeds, but even two seeds can cause adverse outcome. But now it is suggested there is no relation between number of seeds and outcome.

MATERIALS AND METHODS

100 consecutive patients of Acute yellow oleander seed poisoning above 18 years of age admitted at Government Dharmapuri Medical college were included in the study during the period of January 2021 to June 2022. **Study design-** Cross sectional study. **Inclusion criteria:** Patients were selected irrespective of sex, but cases above the age of 18 years were included in the study, Patients with history of consumption of acute yellow oleander seed presented at Government Dharmapuri Medical College. **Exclusion Criteria:** Patients with double poisoning, Patients with cardiac diseases, chronic kidney disease, patients on drugs like diuretics, beta blockers, arrhythmogenic drugs for some other illness were excluded from the study. Consent was obtained from all patients before enrolling the study. The study was clearly explained to the patients and relatives in their language. Parameters assessed were 1. Number of seeds consumed 2. Whether dry seeds or green seeds 3. Whether seeds were grounded before consumption 4. Serum electrolytes 4. Electrocardiographic changes 5. Outcome.

RESULT

Out of 100 patients in the study 54 patients had normal ECG, Where as 41 patients had ECG Changes. Table 1 shows the relationship between of seeds taken and Electrocardiographic changes. 56 percent of patients who took more than 4 seeds had ECG changes where as only 4 percent of patients who consumed less than 2 seeds had ECG changes.

Table 1: Relation between number of seeds consumed and ECG changes

Number of seeds taken	Number of patients consumed	Number of patients with ECG Changes	Percentage of ECG changes among consumed
1 to 2 seeds	52	6	11%
3 to 4 seeds	32	23	71%
More than 4 seeds	16	12	75%

Table 2 shows the various Electrocardiographic changes in acute yellow oleander seed poisoning. Among 100 patients 59 patients had normal ECG. 41 patients had abnormal electrocardiographic findings. Sinus bradycardia was seen 22 patients which accounts for 53 percent of abnormal ECG.

Table 2: Various types of ECG changes

ECG Changes	Number (%)
Normal ECG	59
Sinus bradycardia	22
Sino atrial block	3
First degree heart block	8
Second degree Mobitz type 1 block	2
Second degree Mobitz type 2 block	1

Complete heart block	3
Junctional rhythm	1
Ventricular tachycardia	1

DISCUSSION

Our study included 100 patients of Acute yellow oleander seed poisoning. 59 of our patients had Normal ECG. Abnormal ECG was found in 41 patients. Sinus bradycardia was the commonest ECG change found in our study. Study by Jalal Zamani et al also showed sinus bradycardia was the commonest ECG abnormality. Next to sinus bradycardia first degree heart block was common in our study. One patient had ventricular tachycardia who succumbed to death.

CONCLUSION

Acute yellow oleander seed poisoning shows wide spectrum of ECG changes. The electrocardiographic abnormalities are more in those who consumed more seeds. So it is important to closely observe these patients. Serial ECG is mandatory in these patients to identify the electrocardiographic abnormality early and to treat accordingly. As some complications can even occur late, it is better not to discharge these patients prematurely.

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