Volume : 2 | Issue : 6 | June 2013 • ISSN No 2277 - 8179

Research Paper

Medical Science

KEYWORDS : Cryptostegia grandiflora, cardiac glycosides,arrhythmias,digitalis

Poisoning Due to Cryptostegia Grandiflora (Indian Rubbervine)

Dr.H. B. Prasad | Associate Professor, Department of Medicine, B.J.Govt Medical College Pune

ABSTRACT

We report Four members of a family, Father,two daughters and son who consumed kadha .one of contaminated with Cryptostegia Grandiflora (Indian Rubbervine)which contains cardiac glycosides and presented with various types of arrhythmias and hypotension.one of them succumbed due to resistant ventricular tachycardia. Poisoning due to to Cryptostegia Grandiflora has not been reorted from India in last 50 years.

CASE REPORT

Four members of a family presented to us with history of consumption of some kadha. Prepared with a mixture of Neem (Azadirchata Indica), Adulsa(Graptophyllum Pictum) and Guduchi(Tinospora Cordifolia).

Father, 52 year old man who claimed to have knowledge of herbal medications and was into the habit of selfmedication came with history of mild grade intermittent fever. He consumed Some herbal mixture(Kadha) and was admitted with complaints of pain in abdomen,nausea and vomiting since 1 day.on examination he was febrile Pulse was 96/min irrreglarly irregular, BP was 110/70 mm of Hg.His systemic examination was normal and lab reports were also normal .Daughter, a 13 yr female student presented with H/O ,mild grade headache since 1 day H/O Consumption of same kadha .Came with chief complaints of pain in abdomen, nausea and vomiting and on examination she was Afebrile, Pulse was 70/m irregularly irregular, BP was 100/70 mm of Hg .Systemic examination was normal except for tenderness in epigastric region. All lab reports were normal except hyperkalemia which was treated . Son, 18 yr male gave H/o mild grade intermittent fever since 2 days .He consumed the same kadha and came with chief complaints of pain in abdomen, nausea andvomiting O/E he was Afebrile Pulse was 40/m regular but was later 60/m irregular irregular, BP was 100/70 mm of hg .His systemic examination was normal and lab investigations were normal The elder daughter 18 yr female, came with H/O mild grade intermittent fever since 6 days. She also consumed the same kadha and was admitted with chief complaints of pain in abdomen ,nausea and vomiting .on examination she was Afebrile, Pulse was 76/min Irregularly Irregular, BP was 110/70. Respiratory system examination was normal, abdominal examination showed Tenderness in epigastric region .on CNS examination she was drowsy but arousable & irritable, Cranial nerves were normal, Tone was increased in all limbs Power was grade 3 at all joints ,Reflexes were 3+, Plantars were flexors.Her lab reports were normal except for hyperkalemia which was treated.

ECGs of all patients showed various arrhythmias and blocks like Mobitz type1, Mobitz type 2 ,Junctional rhythm ,Ist degree HB , A-V dissociation, atrial fibrillation and Ventricular tachycardia In view of the various arrhythmias and blocks digitalis toxicity was considered and Digoxin levels were done. The values for father was 0.87,daughter was 0.3 and son was 0.2 nmoles per liter respectively. We also did CPK/MB levels for all of them thinking in terms of myocarditis and the levels were as follows – father 1159/45, daughter 1 383/34, son 136/20 and the other daughter 1152 u/litre. The levels after 3 days were 3/20, 52/21 and 114/11 for the father ,daughter and the son respectively . Normal level for CPK is24 to 175 U/litre and CPK-MB is 2 to 26 U/litre. 2D Echo was normal in all the patients and showed good contractility.

Pts relatives on our request brought the Kadha and the herbs used to make it . Instead of Guduchi, he mistakenly used Indian rubber vine (*Cryptostegia grandiflora*) which contains Cardiac glycosides. There is similiarity between Guduchi and Indian rubbervine that both are climbers over Neem.The specimen of Cryptostegia Grandiflora was identified and authenticated by scientists from Agarkar research institute Pune ,plant and drugs authentication service,Botany branch.

TREATMENT-Patients were treated in MICU with ECG and Electrolyte monitoring regularly .Hyperkalemia was treated with Glucose insulin drip. Patients were also given IV Fluids, Inj Hydrocortisone, Tab Allupent & sos Inj Atropine. Patients also received ayurvedic detoxification by ayurvedic experts.The elder daughter who was maintaining heart rate between 70 -110 beats per minute suddenly developed Hypotension. She had sudden Ventricular Tachycardia . she received DC cardioversion and was put on Inj Amiodarone. she was also paced but developed resistant Ventricular Tachycardia and did not respond and unforunately succumbed. The father ,younger daughter and son improved clinically with appropriate ECG response which subsequently normalized and were discharged. Since the patient consumed three herbs we took help from professors of Ayurveda Department of our institute and Ashtanga Ayurveda Mahavidyalaya Pune who also tried ayurvedic detoxication

DISCUSSION

Cryptostegia Grandiflora (Indian rubbervine) is Perennial climber widely distributed in Madagascar, Florida and India. (**1**) Its medicinal uses are as purgative,analgesic, wound healing remedies, antioxidant, antiviral, and for treatment of schistosomiasis. The Toxic principle is a cardiac glycoside (cryptostigmin l-lV).(**2,5**) Clinical features include dyspnea, colic, profuse sweating, muscle twitching and weakness and Severe cardiac arrhythmias .On Histopathology the findings are Epicardial and endocardial hemorrhages , congestion of liver , kidneys , spleen and lungs. Also seen are Subcapsular hemorrhages in spleen & liver and hyperemia of gastric & intestinal mucosa.(**3**)

Two of our patients had unusual features like Hypertonia and hyperreflexia and subtle higher function derangement which are not mentioned in literature. Treatment is mainly supportive with management of arrhythmias. There is only one reported case of human toxicity from India ,otherwise there is no available data on human poisoning in literature after 1964(**4**) .All the above mentioned clinical and histopathological findings are based on animal studies.

We therefore are reporing this case to highlight the fact that whenever any patient comes with unexplained arrhythmias and hypotension ,poisoning due *to* Cryptostegia grandiflora must be kept in mind and the patient should be questioned about herbal compound intake**.**

ADULSA (Graptophyllum Pictum)

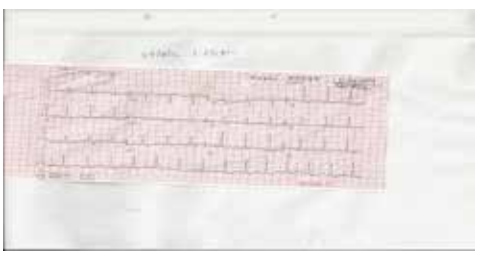
Volume : 2 | Issue : 6 | June 2013 • ISSN No 2277 - 8179

GUDUCHI (TINOSPORA CORDIOFOLIA)

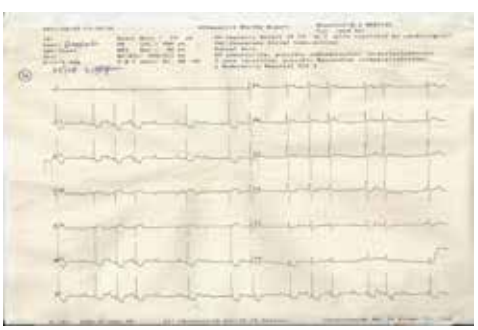
INDIAN RUBBER VINE (CRYPTOSTEGIA GRANDIFLORA)

NEEM (AZADIRCHATA INDICA)

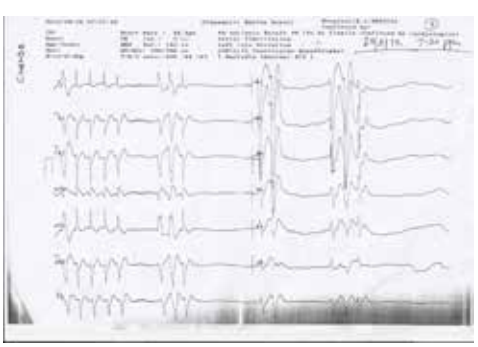
Junctional Rhythm



First degree Heart Block



Mobitz type II , block Digitalis effect



Ventricular Tachycardia

REFERENCE

1)C.O. Adewunmi Natural Products as Agents of Schistosomiasis Control in Nigeria: A Review of Progress Pharmaceutical Biology 1984, Vol. 22, No. 4 , Pages 161-166 | 2) DJ radford, K. cheung, R. urech, JR gollogly, P. duffy Immunological detection of cardiac glycosides in plants Australian Veterinary Journal Volume 71, Issue 8, pages 236–238, August 1994 | 3)Dr.Cook,G.W.Cambell ,A.R.Meldrum Suspected Cryptostegia grandiflora (rubber vine) poisoning in horses Australian vetenary journal ,September 1990 vol 61,no 9 | | 4)Mathur K S,Dube B.K cryptostegia grandiflora poisoning simulating digitalis toxicity journal of Indiamn Medical association 1964 Apr 16;42:381-5. | 5) Santhosh Kondajji Hanumanthappa,Manjunatha Hanumanthappa Krishna Venkatarangaiah, Pradeepa Krishnappa, Rajesh Kashi Prakash Gupta, Analgesic activity of Cryptostegia grandiflora (Roxb.) R.br. leaves methanol extract using mice, Asian Pacific Journal of Tropical Disaease 2012 ,S494-S498 |