

## A Coffin Tragedy Justicia Adhatoda Toxicity: A Case Report

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### Abstract

Many herbal medications are commonly being used as therapeutic remedies for common ailments and are being sold over the counter. Plants contain many active ingredients that can provoke adverse reactions when medicinal herbs are used improperly. The side effects of many medicinal herbs are not widely known and studied.

Here we present a case of two brothers, 32 yrs old patient X and 27 yrs old patient Y, with no known comorbidities, who presented to the ED with history of consumption of Homeopathic cough syrup following which they developed multiple episodes of vomiting, associated with giddiness, restlessness and vague discomfort. On enquiry the content of the medication was found to be *Rhustox* and *Justicia adhatoda*.

On presentation, both the patients were drowsy with unrecordable blood pressure. ECG of patient X showed Ventricular Tachycardia. Multiple attempts of electrical cardio version was attempted but unsuccessful, followed by Amiodarone infusion followed by Transvenous pacing but over drive pacing could not be achieved. Subsequently, in view of Intractable VT patient was initiated on *Inj Lignocaine* infusion which was continued for 6 hours. VT was reverted over a period of next 4 - 6 hours. ECG of patient Y showed Sinus Tachycardia with recurrent VPCs. He was managed conservatively with rate control methods.

Holter study was done for both the patients which was found to be normal. Both of them were discharged in haemodynamically stable condition on day 3.

**Keywords:** Coffin; Tragedy; Justicia; Adhatoda; Toxicity.

### INTRODUCTION

Medicinal plants have been used in all cultures for thousands of years. These drugs are administered for common ailments as well as for specific conditions such as Hypertension, Diabetes, Cardio

vascular disorders and neuro psychiatric disorders. According to WHO, 80% of the population of developing countries rely on them as a primary source of health care.<sup>1</sup> Apart from being cheap and easily available, the general belief that these drugs are comparatively "safe" makes them locally

popular. With the increasing popularity of current herbal practice, the professional community and the public should be alerted about the risk and side effect of herbal substances easily available over the counter. However, not many case reports or literature exists that studies the systemic toxicity caused by the plant extracts.

## CASE REPORT

2 brothers, 32 year old X and 27 year old Y presented with similar complaints of multiple episodes of intractable vomiting, giddiness, restlessness and perception of vague discomfort and severe hemodynamic instability with the common element of both having consumed a Homeopathic decoction of cough syrup for occasional cough and immunity booster against COVID 19.

### Symptoms

#### Patient X

- No known comorbidities
- c/o Multiple episodes of Vomiting: Intractable, containing food particles, non-bilious, non-projectile, non-blood stained
- Assoc. with Giddiness, Restlessness and Vague discomfort.
- H/o consumption of Homeopathic cough syrup – for cough and as immunity boosters

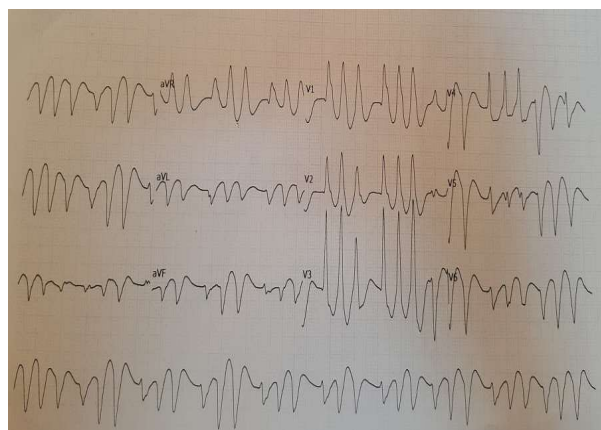


Fig. 1: Development of VT in patient X

**Treatment:** Patient resuscitated with CPR and subsequently intubated - For Airway protection & Hemodynamic compromise.

I/v/o Unstable Ventricular Arrhythmia  
Multiple attempts of electrical cardio version attempted–Unsuccessful

in Covid season

- Contacted the Homeopathic practitioner- Content found to be Rhustox and **Justicia adhatoda**.

### Examination

On presentation to ER, Patient was drowsy, GCS: E3V4M5

**Airway:** Patent, Clear, No secretions

**Breathing:** B/L symmetrical chest rise R.R: 30/min,

**SPO2:** 85% room air.

**Circulation:** Weak thready peripheral pulse, Peripheries cold.

**HR:** 180-200 beats/mins

**BP:** Unrecordable

**Sequence of Events:** Patient became unresponsive during the examination; CPR was initiated and patient was resuscitated, samples and ECG were obtained subsequently.

**VBG:** Respiratory Alkalosis with Metabolic predominantly Lactic Acidosis, Potassium: 3.5

**Additionally:** Magnesium: 1.9 mg/dl (N:1.7-2.2)

**ECG:** (Obtained post Initial Resuscitation) Ventricular Tachycardia (Showing evolution and Intractability with ACLS 2020 Management) (Fig. 1 & 2):

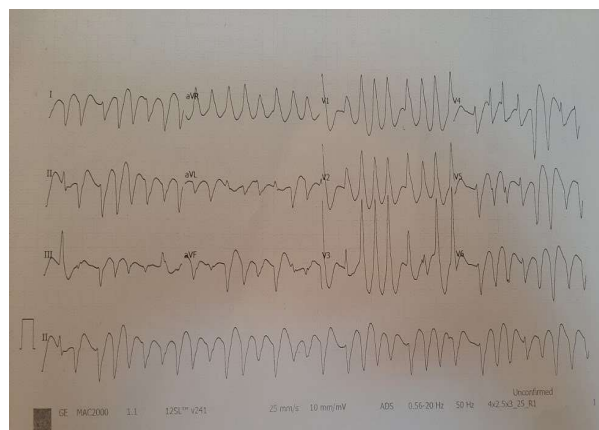


Fig. 2: Intractable VT in patient X

↓  
Amiodarone infusion  
(Loading dose: 150mg followed by 360 mg/500 ml  
5D @1mg/min over 6hours)  
↓

Transcutaneous pacing-Over drive pacing could not be achieved.



Subsequently, I/v/o Intractable VT (ECG Fig. 2) Initiated on Inj. Lignocain Einfeldion, continued for 6 hours.

(Initial dose of 1.5mg/kg followed by infusion dose of 2mg/min)



VT gradually reverted over a period of next 4-6 hours.

**Bedside ECHO:** No RWMA, EF-50-60%

**TropI:** <0.010 (Negative)

### Symptoms:

#### Patient Y

- Presented with similar complaints as Patient X.

**Examination:** On presentation to ER, Patient was irritable but obeying commands, GCS:E4V4M5

**Airway:** Patent, Clear, No secretions

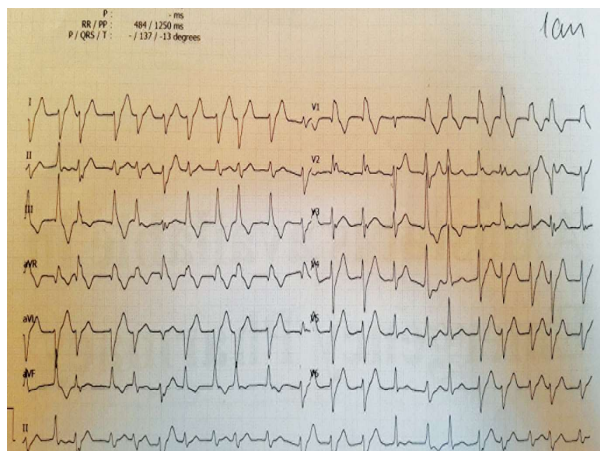
**Breathing:** B/Lsymmetrical chest rise R.R: 24/min, SPO<sub>2</sub>: 90% roomair.

**Circulation:** Weak thready peripheral pulse, Peripheries cold.

**HR:** 110-130 beats/mins

**BP:** Unrecordable

**VBG:** Respiratory and Metabolic Acidosis, Potassium 3.6mEq/L.



**Fig. 3:** Development of polymorphic ventricular premature complexes in patient Y

**Additionally:** Magnesium: 2.2mg/dl(N:1.7-2.2)

**ECG:** Sinus Tachycardia with recurrent VPCs.  
**Fig. 3:**

**Treatment:** Patient intubated-For Air way protection & Haemodynamic compromise.

### Fluid Resuscitation



Since Persistent Hypotension-Inotropes: Noradrenaline (8mg in 50 mlNS @12cc/hr)

Target: To maintain MAP>65mm of Hg



Correctable causes of VPCs ruled out



Rate Control: Inj. Sodium Bicarbonate (1mEq/kg bolus dose followed by infusion dose of 150mEq/1Ldextrose@1mEq/kg/hr to maintain blood pHof7.50-7.55)



Initiated on Inj. Amiodarone infusion.

(Initial dose: 150mg bolus → Infusion dose: 360mg/500ml 5D@1mg/minover 6hours)



Patient continued to have multiple VPC'S Gradually reverted to Sinus Rhythm over the next 3-4 hours

**Bedside ECHO:** No RWMA, EF-50-60%

**TropI:** <0.010(Negative)

## DISCUSSION

Rhus Tox (Rhus Toxicodendron) is produced from the plant commonly known as Poison Ivy and it is used in Homeopathic medication for temporary relief of pain and soreness due to Arthritis, Rheumatism or Tendinitis. The toxic profile of Rhus Tox includes skin irritation, restlessness and joint stiffness.<sup>2</sup>

Justicia Adhatoda, commonly known as Malabar nut or Adulsa, is a well known herb used in indigenous system of medicine for its beneficial effects in Cough, Bronchitis or Asthma. Although the medicinal value of this plant is due to the presence of small doses of active compounds

which produce physiological actions in human body, some important bioactive compounds have been reported in various parts of *Justicia adhatoda* are essential oil and quinazoline alkaloids.<sup>3</sup> Toxic profile of *Justicia Adhatoda* was not found and has not been studied.

The major problem with the use of herbal based treatments is the lack of definite and complete information about the composition of extracts. There is a strong need for scientific evidence of the pharmacodynamics, pharmacokinetics and safety profile of herb derived remedies employed for centuries as traditional medicine. This is particularly because sound knowledge of the mechanism of action and interaction is essential for a clinical risk assessment. Apart from toxicity of intended herbs the lack of stringent and harmonised quality control and effective monitoring system imposed on herbal medications may lead to contamination or adulteration that would prove harmful to humans.<sup>4</sup> Heavy metal contaminants like cadmium, arsenic and lead can be risk factor in contributing to the toxicity of these herbal products.<sup>5</sup> In addition an increasing number of herbal supplements have been found to be adulterated with active pharmaceutical products.<sup>6</sup>

## CONCLUSION

- **OTC Herbal drugs/Immunity Boosters are not side effects free: Many are wrongfully advertised and promoted, even in the current environment:** perception of people in reality varies widely from actual medical science. Some may have deleterious effects with cardiotoxicity, neuromuscular toxicity, hepatotoxicity, nephrotoxicity, hematopoietictoxicity.
- **Biosafety profile assessment of the plant chemicals is just as important:** Most of the times acute toxicity cannot be explained by other aetiologies. So further research and easy access to information about pharmacological profile of herbal medicine should be available.

- **Caution over unsupervised use of herbal medications:** This study emphasises the necessity to be in the belief that herbal medicines are not always safe; thus, the need to control their use; also, that they should be available only in standardised formulations by prescriptions issued by trained medical professional, who are fully aware of the potential side effects.
- **Mixopathy:** In current environment where there is an aimed conglomeration of all allied sciences with Allopathy emphasis should also be added on the research aspect and not just sharing of procedural perks.

**Footnotes:** There is no conflict of interest.

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