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Case Report

Managing monomorphic ventricular tachycardia without cardioversion: A case report

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ABSTRACT

Cardiovascular diseases account for nearly 31% of global deaths. Ventricular arrhythmia cause 1–2 in 1000 sudden cardiac deaths. Patient with a known case of coronary artery disease presented with complaints of heaviness in the chest with pain radiating to the left shoulder joint with sweating and dizziness for 6 months. The patient was diagnosed as monomorphic ventricular tachycardia (mVT) and left ventricular hypertrophy (LVH) based on electrocardiograph (ECG) findings. Treatment planned to bring *Agni, Rasa, Vata Dosha* into homeostasis. mVT is completely cured in 24 days of *Ayurvedic* treatment. The electrocardiograph was normal after the course of treatment. In this case report, we treated the patient with monomorphic ventricular tachycardia with *Ayurvedic* treatment. This case report provides guidance for heart disease management with *Ayurveda*.

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1. Introduction

Cardiovascular diseases account for almost 31% of global deaths. Ventricular arrhythmia cause 1–2 in 1000 sudden cardiac deaths [1]. Characteristics of ventricular tachycardia (VT) are wide QRS complexes, i.e. a duration of QRS complexes greater than 120 milliseconds. Tachyarrhythmia is present when the heart rate is over 100 bpm. The most common cause of VT is ischemic heart disease (IHD), Congenital heart defects, infiltrative cardiomyopathy, electrolyte imbalance, digitalis toxicity, etc.; these are other causes of VT. There are several risk factors for VT including hypertension, previous myocardial infarction, chronic obstructive pulmonary disease. There are two types of ventricular tachycardia (VT) based on duration. Sustained VT and non-sustained VT [2]. According to modern medicine, the first-line therapy for IHD with VT is the use of beta-blocker therapy. Anti-arrhythmic drugs are used. Therapeutic approach to ventricular tachycardia characterized by management of underlying cardiac disease [3]. There are some reviews showing that antiarrhythmic drugs did not reduce mortality and also showed various adverse drug reactions [4]. Despite advances in the medical sciences in cardiovascular management, the mortality burden from heart failure is increasing. There is a need for safe,

inexpensive treatment modalities [5]. Various *Ayurvedic* medicines are most effective in treating heart diseases. But published evidence in indexed journals is lacking. Here we treated patients with monomorphic ventricular tachycardia with *Ayurvedic* medicines.

2. Patient information

A 43-year-old male patient with a known case of coronary artery disease came to the outpatient department of Kayachikitsa All India Institute of Ayurveda, New Delhi. He presented with complaints of heaviness in the chest with pain radiating to the left shoulder joints with sweating and dizziness since 6 months.

He suffered 7 months ago from ST-elevated inferior wall myocardial infarction (IW STEMI – Dec 2020), non-vascularized recurrent mVT. He had recurrent ventricular tachycardia. Patient on medication Tab Metocard XL 25 mg once daily (OD), Tab Ticagrelor 90 mg OD, Tab Amiodarone 200 mg OD, Tb Atorva 40 mg OD, Tb Ecosprin 75 mg OD for one year. Having started *Ayurveda* medicine, the patient himself stopped modern medicine.

3. Clinical findings

General examination revealed a pulse rate of 155/min, blood pressure of 93/68 mmHg, SpO2 of 94%, Respiratory rate 20/min and normal temperature. Pallor, icterus, clubbing were absent.

In Systemic Examination respiratory system within normal limit and cardiovascular examination showed abnormal heart sounds i.e

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split S1 heart sound. Per abdominal examination within normal limits.

3.1. Ashtavidha Parikshan

Nadi- 155/min, Mutra- 3-4 times per day, Mala-once in 2-3 days, Jihva- Sama (coated), Shabda- Samanya, Sparsha- Samshitoshna, Drik – Prakrita, Aakriti- (Body Built)-Madhyam.

The patient has Kapha-Vataj Prakriti, average Samhanan (physique) and average Satva (mental strength). Lakshana of Prakriti, Satva, Samhanan mentioned in Charak Vimansthana used for assessment. (Assesment done by asking question to the patient). In this patient there was vitiation of Rasavaha, Purishwaha Strotasa.

3.2. Diagnostic assessment

ECG showed broad QRS complex tachycardia at 155/min, no P waves visible, ST depression in V3, V4, V5, V6, inverted T waves in I and aVL. Patient diagnosed as monomorphic ventricular tachycardia (Hrudroga) on the basis of ECG findings. The patient had stress tread meal test and 2D echocardiogram report within normal limits.

3.3. Therapeutic intervention

Treatment principle was Anulomana, Hrudya, Ojaskara and Raktaprasadaka. For Deepana (to increase metabolic efficiency), Abhayarishta was administered 15 ml twice a day half an hour before meals with the same amount of water. The patient was treated with a oral medicinal formulation of Dadimashtaka Churna 2 g + Yogendra Rasa 125 mg + Swarnagairika 125 mg twice daily with Mahatriphala Ghrita 5 ml. Kutaki Churna 2 g with castor oil 10 ml was given at bedtime. The treatment plan is mentioned in timeline 1 (Fig. 1).

4. Follow-up and outcome

Initially, the patient had persistent chest pain with a feeling of heaviness in the chest. After 8 days of treatment, symptomatic

relief was observed in the patient. A normal electrocardiograph (ECG) was observed over a treatment course of 24 days. Initially, the ECG shows tachycardia with a heart rate of up to 155/min, after 16 days of treatment it shows sinus bradycardia. Changes in ECG findings over the course of the 24-day treatment are noted in timeline 2 (Fig. 1).

5. Discussion

In Ayurveda, ventricular tachycardia can be correlated with Hrudroga. Among the three Doshas, the Vata Dosha plays a fundamental role in survival [6]. The root meaning of Vata Dosha is Va gati-Gandhanayo [7]. Gati means constant movement and Gandhanayo means senses (sensory and motor function). The properties of Vata Dosha are Darun [8] (strong impact), Anavasthit (continuous movement), and Bahu Shighra (quick action) [9]. There are five types of Vata Dosha. Pran Vayu is responsible for Hridaya Dharan (heart stability), Dhamani Dharan (circulatory stability) [10]. Arrhythmia results in abnormal heart function. Maintaining normal rhythm (Gati) is a function of Vata Dosha [11]. Impaired Vyana Vayu causes cardiovascular diseases. Rasa-rakta Samhanan is a function of Vata Dosha [12]. Hence, the Vitiation of Vata Dosha along with Rasa is responsible for Hrudroga. Rasa is a circulatory fluid formed after the processing of Agni (metabolic power) on micronutrients. It is the main source for the formation of all tissues in the body [13]. Therefore, we used the treatment plan that kept Agni, Rasa, Vata Dosha in homeostasis. Yogendra Rasa is indicated for vitiation of Vata Dosha [14]. Yogendra Rasa is used to treat oxidative stress and inflammation associated with the cardiac system. It is used as a neurostimulator and a catalyst that improves the therapeutic effectiveness of other formulations. It acts on Ashta Bindu Oja situated in Hridaya and used in Vataja Hridroga [15]. Dadimashtaka Churna contains Dadima (Punica granatum), Dalchini (Cinnamomum zeylanicum), Ela (Elettaria cardamomum), Tejpatra (Cinnamomum Tamala), Sunthi (Zingiber officinale), Maricha (Piper Nigrum), Pip-pali (Piper longum) [16]. Punica has a cardioprotective effect [17]. Cinnamomum zeylanicum acts on ischemia-reperfusion injury and arrhythmia. It has powerful antioxidant properties and reduces troponin I levels [18]. Trikatu reduces triglycerides and low-density

Timeline1-TreatmentPlan

3/8/2021 To 24/8/2021

- 1. Mahatriphala Ghrita 5ml + Dadimashtak Churna 2gm + Yogendra Rasa 125 mg + Swarnagairika 125mg BID
- 2. Abhayarishta 15ml BID 1/2 hour before meal
- 3. Castor oil 10 ml + Kutaki churna 2gm HS

Timeline 2 - ECG changes during course of treatment

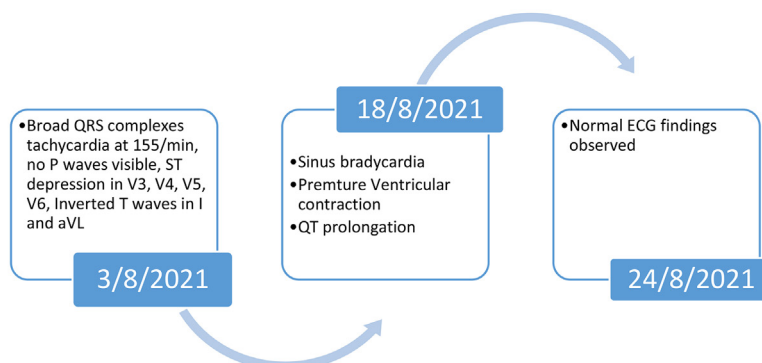


Fig. 1. Timeline 1- Treatment Plan: Timeline 2-ECG changes during course of treatment.

lipoproteins and also increases high-density lipoprotein. It has an antihyperlipidemic effect and reduces the risk of atherosclerosis [19]. *Kutaki* (Picrohiza Kurroa) has *Tikta Rasa*, *Laghu*, *Ruksha Guna*, *Shita Virya*, *Katu Vipaka*. It has *Deepana*, *Bhedana*, *Hrudya* effect [20]. *Abhayarishtha* site of action is *Aamashaya* (stomach), *Pakwashaya* (intestines), *Grahani* (duodenum). In the classic text, its effect is described as *Vanhisandipanmparam* (increase in metabolic performance) [21]. There are some published clinical studies, a pilot study on the treatment of heart failure with additional treatment with *Ayurveda* [22]. In this case report, we treated the patient with ventricular tachycardia with *Ayurvedic* management. This case report provides guidance for heart disease management with *Ayurveda*. This case report provides direction for future research needs in the area of cardiac life support using an *Ayurveda*-based treatment protocol in management of heart disease.

6. Conclusion

In this case report, we treated the patient with ventricular tachycardia with *Ayurvedic* management. This case report provides guidance for management of heart diseases with *Ayurveda*. There is need to conduct this study on large sample size to further evaluate efficacy, dose and duration of treatment. Further research in this direction warranted.

6.1. Limitations of the study

Missing routine investigations in this case. Missing cardiac tests like Troponin T, CPK MB. We lost patient follow-up after treatment.

7. Result

After 24 days of treatment, a complete alleviation of the subjective and objective parameters was observed. Complete relief of symptoms and normal electrocardiograph were noted after treatment. There was no any adverse drug reaction observed during treatment period.

Patient perspective

The patient was satisfied with the treatment as he had been on modern medicine for a year but felt no relief in symptoms and changes in the ECG persisted. After starting *Ayurvedic* medicine, he got relief in symptoms and ECG was normal after treatment. So he was satisfied and happy after the treatment.

Declaration of Patient consent

Authors certified that they obtained consent from patient. Patient understands that his identity will not be revealed in published article.

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Author Contribution

Conceptualization and Treatment Plan- DK.
Rough Draft and *Ayurveda* formulation preparation- DK, PK.
Critical editing of draft- DK, PK.
Data Collection- DK, PK.
Data Presentation- DK, PK.

Declaration of competing interest

Nil.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jaim.2022.100654>.

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