

# Use Of S(+)-Ketamine In A Patient With Chronic Chagasic Cardiopathy For Emergency Cardiac Defibrillation Procedure

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## Abstract

Among the chronic clinical forms of Chagas disease, the anesthesiologists must pay attention to the chagasic cardiomyopathy, since the drugs used in anesthesia, in its majority, act like depressors of the cardiac function.

A male 66 year-old patient presented with chronic chagasic cardiomyopathy (left ventricle ejection fraction of 34%). We administered continuous IV dobutamine and amiodarone. He presented with ventricular tachycardia associated to hypoxemia, pulmonary oedema and arterial hypotension, making necessary an emergency cardiac defibrillation procedure. Since this patient was found in cardiac and respiratory failure, S(+)-ketamine was administered and then 200J was applied for external defibrillation. Cardiac rhythm converted to sinus type. The patient did not recall the event. Etomidate and vecuronium are being used in patients with chagasic cardiopathy presenting satisfactory results. The use of S(+)-ketamine should be studied in this patients to determine its safety.

## INTRODUCTION

Chagas disease is common in Brazil and its causative agent is the protozoan parasite *Trypanosoma cruzi*, which enters the human body through broken skin. The most common way of transmission is by the bite of Triatomine bugs, and the entering of its faeces, which contain the parasites, in the wound left after the bloodmeal. In 32% of those infected, fatal damage to the heart and digestive tract occurs during this chronic phase<sub>1</sub>.

Among the chronic clinical forms of Chagas disease, anesthesiologists must give attention to the chagasic cardiomyopathy, since the drugs used in anesthesia, in its majority, act like depressors of the cardiac function.

## CASE REPORT

A male 66 year-old, 57 kg, patient presented with chronic chagasic cardiomyopathy. We administered continuous intravenous dobutamine (30mcg.Kg<sup>-1</sup>.min<sup>-1</sup>) and amiodarone. Echocardiography revealed ventricular cardiomyopathy, mild pulmonary hypertension, mitral, tricuspid and aortic insufficiency, and a left ventricle ejection fraction of 34%. Sodium was 135mEq/L, potassium 4mEq/L; normal values

of cardiac enzymes. He presented ventricular tachycardia (150bpm) associated to hypoxemia (SpO<sub>2</sub>=82%), pulmonary oedema, arterial hypotension (mean arterial pressure of 30mmHg), and reduced peripheral perfusion, making necessary an emergency defibrillation procedure. We used S(+)-ketamine (70mg) and the patient turned to a cataleptic state, when 200J was applied for external defibrillation. Cardiac rhythm converted to sinus type and mean arterial pressure rose to 85mmHg. At the end of the procedure, the patient recovered the conscience, without recalling the event.

## DISCUSSION

Chronic chagasic cardiopathy is the main morbid manifestation of Chagas disease, being present in almost all endemic zones. Chagasic cardiopathy includes: cardiac failure, pulmonary or systemic thromboembolic events, bradyarrhythmias secondary to sinus node dysfunction, atrioventricular blockade, ventricular extra-systole and ventricular tachycardia, which is a frequent cause of cardiac arrest. S(+)-ketamine is a drug with fast onset that does not depress the myocardium and neither the respiratory centers, produces a dissociating anesthesia, characterized by profound analgesia and mild amnesia. Emergency

defibrillation is a fast procedure and this patient was found in cardiac and respiratory failure, what justifies the use of S(+)-ketamine in this case. Etomidate and vecuronium are being used in patients with chagasic cardiopathy presenting satisfactory results. There are no studies evaluating others anesthetics in this situation. The use of S(+)-ketamine should be studied in patients with chagasic cardiopathy to determine its safety.

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