**CASE REPORT**

**Authors:** Denilsa D. P. Navalha, MBBS1, Amrin Kharawala, MBBS2, Alexander Ogden, MD3, Chukwuebuka Great Ubochi, MD1, Lindsey Croll4, Mohan Gudiwada, MBBS2, Nidhish Tiwari, MBBS2

1. Department of Internal Medicine, University of Nebraska Medical Center, Omaha, Nebraska, USA
2. Department of Cardiology, University of Nebraska Medical Center, Omaha, Nebraska, USA
3. Department of Family Medicine, University of Nebraska Medical Center, Omaha, Nebraska, USA
4. Des Moines University College of Osteopathic Medicine, Des Moines, Iowa, USA

**Title: A Rare Case Study of Acute Alcohol Intoxication and Marijuana associated Myocarditis**

**Background:** Alcohol induced myocarditis and cardiomyopathy are usually associated with chronic drinking. In the current literature, there are rarely any cases of binge drinking or marijuana use as an etiology for myocarditis.

**Case Description:** A 21-year-old female presented to the emergency department after severe alcohol intoxication and starvation. She developed sharp non-exertional, non-radiating midsternal chest discomfort with an intensity rated 6/10, which worsened with deep inspiration and palpation of the chest. Physical exam was unremarkable except for tachycardia to 154 beats per minute and tachypnea. Laboratory findings were significant for severe metabolic acidosis with pH of 6.93, bicarbonate of 6 mmol/L and anion gap of 45. Blood alcohol level was 203 mg/dl and urine drug screen was positive for cannabinoids. High-sensitivity troponin was positive and peaked at 16,995 ng/L. Viral, bacterial and autoimmune serologies were unremarkable. The electrocardiogram showed sinus tachycardia to 146 beats per minute with occasional premature ventricular complexes and prolonged QTc of 436 milliseconds which increased to 604 milliseconds. Echocardiogram showed hypokinetic mid inferolateral segment with normal left ventricle and right ventricle chamber sizes and function. Based on the age and presenting symptoms, ischemic etiology was deemed less likely, and a cardiac magnetic resonance imaging (CMR) was pursued which showed delayed enhancement of basal septal mid myocardial stripe with left ventricular ejection fraction of 40%.

**Clinical reasoning:** Based on cardiac MRI findings, the patient was diagnosed with myocarditis attributed to acute alcohol use with marijuana being a possible contributing etiology as well. The patient was treated conservatively and ultimately discharged on goal directed medical therapy for new onset heart failure with reduced ejection fraction and will be followed up to check for possible recovery.

**Conclusion:** Although rare, substantially increasing number of daily drinks from baseline can cause myocarditis. Patients suspected to have myocarditis should be screened for alcohol and cannabinoid use. Further studies to understand these associations are warranted.

**References:**

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