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Quadruple Combo Injury -a Unique Case of Post Covid-19 Dilated Cardiomyopathy in a Patient with Severe Mitral Regurgitation, Alcohol-Cannabinoid Use

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ABSTARCT

Since the Covid-19 Pandemic, every patient encounter has presented a unique learning opportunity geared towards improving patient outcomes. While a lot of intensivists may be fixated on the array of respiratory problems created by this monster virus, it's no longer aliens the extent of myocardial injury and dysfunction associated with this. Hence, we Present a case of Post -Covid Myocardial Dysfunction with several convolutions' severe mitral regurgitation, alcohol and cannabinoid myocardial dysfunction.

CASE PRESENTATION

Patient is a 75-year-old female who is 2 months post-Covid, significant hx of alcohol and cannabinoid use, Severe MR who presented with shortness of breath at rest, orthopnea and PND. Heart sounds - S1, S2, S3, JVD with bi-basal crepitations. EKG showed sinus tachycardia with Left Ventricular Hypertrophy. Echocardiogram was revealing of severe left ventricular hypokinesis, ejection fraction of 20-25 %, severe mitral regurgitation. Patient had left heart catheterization which showed mild luminal irregularities without CAD.

She was started on guideline directed medical therapy, Metoprolol 12.5mg, entresto, empagliflozin and Lasix. She was however poorly tolerant with episodes of symptomatic hypotension. A consensus was reached to graduate her GDMT as tolerated with change in therapy to bisoprolol 2.5 mg daily, digoxin, spironolactone and vericiguat with the hope that her EF will improve with time. Her social issues were addressed with Cardiothoracic surgery evaluation her mitral regurgitation problems.

DISCUSSION

Several mechanisms have been postulated in covid -19 induced cardiomyopathy which includes myocardial stunning from catecholamine surge and an inflammatory process catalyzed by cytokine storm. The cumulative effect is myocardial-systolic dysfunction. Myocardial recovery could be negatively impacted by several factors which includes myocardial alcohol toxicity and cardiac depression from cannabinoid use. Alcohol on its own causes' ventricular dilatation and impairment in cardiac function. The effect of cannabinoid on the heart is often

under-represented in the literature. Marijuana has been reported to have inflammatory effects on the cardiovascular system via cannabis induced arteritis, vasospasms and platelet aggregation.

CONCLUSION

Post covid-19 cardiomyopathy is a rare occurrence and when present often under reported or misdiagnosed as respiratory complications. Early detection is key and allows for commencement of GDMT. Follow up echo is necessary to re-assess ventricular function. Social habits such as alcohol and cannabinoid use must be evaluated if we must prevent myocardial deterioration and facilitate recovery. Incidence of sudden cardiac death during the period awaiting myocardial recovery is similar to that of patients with ischemic heart disease. Bridging with a life vest while awaiting the maximal effect of GDMT might be enough to avert mortality.