

## DOES PNEUMONIA HAVE A NEGATIVE EFFECT ON CARDIAC FUNCTION IN PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY?

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**Background:** Patients with Duchenne Muscular Dystrophy (DMD) suffer from progressive muscle degeneration and weakness. Weakness of respiratory muscles lead to chronic respiratory failure. With advancement of respiratory support, more patients may survive pulmonary complications and succumb to heart failure and ventricular arrhythmias associated with their cardiomyopathy. The relationship between pneumonia and its impact on cardiomyopathy has not been well explored. We hypothesized that pneumonia in a patient with DMD worsens cardiac function

**Materials/Methods:** A retrospective chart review of all patients with a diagnosis of DMD at Texas Children's Hospital were performed. Patients who were treated for pneumonia as an inpatient between 2010 to 2019 were included. Pneumonia was defined by presence of all the following: fever, increased secretions, new opacity on CXR, and prescription of intravenous antibiotics. Cardiac function was quantified by left ventricular ejection fraction (EF) on echocardiogram. EF from 6 months prior to the pneumonia to last date of visit were documented. Patients on whom an accurate LVEF could not be calculated by biplane method or who had not had an echocardiogram within one year of their pneumonia episode were excluded from the study.

**Results:** The study population consisted of 149 patients, of which 24 patients met the inclusion criteria. Seven (30%) patients had pre-existing cardiomyopathy with LVEF <55%. Among them, 3 (40%) had a decrease in EF by median of 10% (range 4-16%) ( $p=0.292$ ). Seventeen (70%) of patients had no cardiomyopathy before pneumonia. Among them 7 (10%) had a drop in EF by median of 9% (range 4-22%,  $p=0.034$ ). On multiple linear regression analysis decrease in EF was not associated with any demographic factors. None of the patients had a complete recovery of EF to their baseline after pneumonia on follow up.

**Conclusions:** In this small study we found that, in some patients with DMD, left ventricular EF decreases with pneumonia and more importantly does not return to baseline upon follow-up.