**Is Intravenous Immunoglobulin (IVIG) an effective treatment for viral myocarditis?**

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With an incidence of 1 per 100,000 children, myocarditis is a rare condition, but it has a high rate of morbidity and mortality. Myocarditis is estimated to be the cause of death in about 12% of children with sudden cardiac death. Children who develop myocarditis can go on to develop cardiomyopathy, congestive heart failure, or require a ventricular assist device as a bridge to heart transplant. Unfortunately the current management for myocarditis only involves supportive measures. Currently, there are three major ways in which myocardial injury occurs in myocarditis; acute viral infection with myocardial injury, persistent inflammation after viral injury due to molecular mimicry, or chronic viral infection of the myocardium. With the pathogenesis of myocarditis in mind, it has been thought that immunosuppressive therapies or inhibition of viral replication are possible avenues for treatment of myocarditis.

A review of the literature was performed to determine the effectiveness of intravenous immunoglobulin (IVIG) in the treatment for myocarditis. Using the PubMed MeSH database, the terms “myocarditis” and “IVIG” were used. Articles used were limited to children between the age of 0-21 years old and those printed in English. Four articles were identified; all of them were retrospective studies examining the medications given during hospital stay with the main outcome of survival. Reviewing each article, no study provided evidence that IVIG was a better treatment for myocarditis versus supportive care. One articles looked at a left ventricular ejection fraction (LVEF) three and six months after illness; it demonstrated at significant difference in LVEF at both intervals, but the number of patients in the study was small and there were seven patients not included due to limited clinical data. Though no study demonstrated that IVIG was better than supportive care for treatment of myocarditis, the studies were limited due to the small number of patients examined – making type I error a possibility. Likewise, randomized prospective studies are optimal when examining a therapy. Thus further studies are necessary to determine if IVIG may be a possible treatment for myocarditis versus supportive.

**References**

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