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Cardiac diastolic function in pediatric AIDS/HIV-carriers: Assessment, treatment and prevention of future cardiovascular diseases

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Cardiovascular manifestations occur frequently in children with human immunodeficiency virus (HIV) vertical infection. The prevalence of HIV infection among children is high as advances in therapy and management of the disease improve life expectancy. In a prospective study, the 5-year cumulative incidence of cardiac dysfunction in children ranged from 18% to 39%, and it was the underlying cause of HIV-related death in 11.8% of children. The exact pathogenesis of the cardiac manifestations remains unclear, but it is most likely multifactorial. The cardiac abnormality most commonly seen among HIV-infected children is dilated cardiomyopathy, with abnormalities ranging from asymptomatic cardiac dilation to severe chronic heart failure. Mild depression of left ventricle (LV) and LV mass were risk factors for death, independent of age, duration of illness, CD4 count, HIV-1 viral load, neurologic disease or malnutrition. Subclinical cardiac abnormalities develop early in HIV-infected children, even among those with asymptomatic HIV disease and those who are asymptomatic for cardiac dysfunction. In a research conducted at our Institution, among 94 patients, fifty (54.3%, 95% CI, 44.1% to 64.5%) children showed diastolic dysfunction. Left ventricular dysfunction occurred in 38.7% (95%CI, 28.8% to 48.6%) of the children, and the prevailing dysfunction type was decreased myocardial compliance. Right ventricular dysfunction was apparent in 29.4% (95%CI, 20.1% to 38.7%) of the children, and on this side, the abnormal relaxation type was most prevalent. Simultaneous biventricular dysfunction occurred in 14.1% (95%CI, 7.0% to 21.2%) of children. Ventricular dysfunction was not associated with the immunological status of the children. So, cardiac diastolic dysfunction occurs in children with selected characteristics and is not associated with immunological status. The myocardial compliance impairment was the most common dysfunction occurring on the left side, and abnormal relaxation was the most common dysfunction occurring on the right side. These children and adolescents are on cardiovascular follow-up, receiving treatment in order to avoid evolution of the respective ventricular impairment that could lead, in some of them, to an irreversible condition, compromising their prognostic.

Biography

Mauricio Laerte Silva has a Master Degree in Medical Sciences at the Federal University of Santa Catarina and in Epidemiology at Federal University of Rio Grande do Sul. He attended a Post-Doctoral Fellowship in Perinatal Research in the Wayne State University, in Michigan, USA, and in the Georgetown University, in Washington DC, USA, where his focus was the fetal cardiac function, related to infections and placental function. Now a days he is completing his Doctorate in Medical Sciences at Federal University of Santa Catarina. His research field is on cardiovascular risk factors in diseases like AIDS and others with systemic inflammatory compromise, analysing mainly the cardiac and endothelium functions by means of ultrasonography. He served his presidency of the Pediatric Society of Santa Catarina and concurrently was an effective member of the scientific Department of Pediatric Cardiology of the Brazilian Society of Pediatrics in 4 periods.

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