



CKMB: a marker of arterial remodeling in the chronic phase of Kawasaki Disease?

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BACKGROUND

Kawasaki disease (DK) is a primary and systemic vasculitis that mainly compromises small and medium vessels, with coronary arteries being the most affected. The clinical course of DK is three-phase. Several complications can occur in the chronic phase, even years after the disappearance of the symptoms, such as coronary and other artery aneurysms, which requires long-term follow-up of these patients. The functional and histopathological analyzes of the coronary lesions show a continuous pathological process, with migration of muscle cells into the intima where they become myofibroblasts that enter mitosis for years leading to vessel stenosis. Even a coronary artery apparently without compromise and without history of alterations to the echocardiogram, may show future changes.

MATERIALS AND METHODS

A retrospective analytical-descriptive study was performed through the physical and electronic records analysis (trakCare) of 149 patients with DK between 2012 and 2018. All patients who were regularly followed at the pediatric hospital rheumatology out patient clinic. The following data were collected: age, sex, CKMB levels, persistence time of CKMB elevation, levels of CPK, troponin, acute phase inflammatory activity and presence of coronary lesion by means of the Echocardiogram with evaluation of the coronary by the Z score. Descriptive and inferential analyzes were performed using the software IBM SPSS 21 and Excel Office 365. The Kruskal Wallis parametric test was used to correlate the presence of lesions on the echocardiogram and the serum level of CKMB in the chronic phase.

RESULTS

In the study of 149 patients, 57.1% were boys and 61.04% were between 1 and 5 years old. The CKMB presented elevation in the chronic phase of the disease in 90.6% (n = 135) and had no relation with CPK or troponin that remained normal in all patients during the chronic phase of the disease. CKMB remained elevated during the chronic phase, on average for 3.5 / 4 years. In the echocardiogram, 59 patients (38.31%) had coronary alterations that persisted between one month and two years. No relationship was found between the intensity of the inflammatory activity in the acute phase and the elevation of CKMB in the chronic phase.

CONCLUSION

The CKMB enzyme may be a likely marker of remodeling of the vessel wall, as it is produced by the muscle cell in mitosis or regeneration, a fact that occurs during years in the vessel wall affected by the acute phase inflammatory process in DK, which can lead to the formation of aneurysms or stenoses.