

Association of QTc interval with coronary involvement in Kawasaki disease.

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Introduction

Kawasaki disease (KD) is a self-limited acute vasculitis affecting small and medium-sized vessels. Diagnosis must be quick, based on clinical criteria and supported by supplementary tests. Up to 20-30% of patients have coronary involvement (ectasia or aneurysms).

EKG is an easy-to-perform and reproducible technique. It has low cost and high availability in any medical center. Up to date, no EKG sign has been associated to coronary involvement. Measurement of QTc interval is the most easy, accessible and widely used method for evaluating ventricular repolarization in children.

Objectives

To describe an association between the presence of coronary involvement of patients with KD and the QTc interval manually measured in the 12-lead surface EKG.

Material and methods

Observational retrospective cross-sectional study of a cohort of Spanish and Japanese patients with KD. The coronary involvement and the QTc interval were evaluated in the EKG performed in the acute period of the disease (up to 6 weeks of illness).

Results

We recruited 180 patients with KD. The median age was 31.1 months [IQ:15.3-48.1], 61.8% males. In our sample, 51/180 (28.3%) patients had coronary involvement. 18.3% (33/180) had ectasia and 10% (18/180) coronary aneurysms. 1.1% (2/180) had giant aneurysms. 95.5% (172/180) of all patients and 98% (50/51) patients with coronary involvement received intravenous immunoglobulin.

QTc interval in V5 and V6 was significantly shorter in patients with coronary involvement (V5: median 378 [IQ:364-395] vs 390 [IQ:371-411] ms, $p=0.042$; V6: median 377 [IQ:364-392] vs 390 [IQ:371-410] ms, $p=0.014$). A QTc interval <385 ms in lead V6 was associated with a 2.5-fold increased risk of coronary involvement (OR: 2.5 [CI95%:1.2;5.3], $p=0.016$).

Conclusions

The QTc interval seems to be a promising marker of coronary involvement in the acute phase of KD. Patients with a QTc interval <385 ms may be susceptible of early, intensive treatment. Prospective studies are needed to validate this hypothesis.