

Risk factors for Kawasaki disease-associated coronary abnormalities differ depending on age

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Abstract

Introduction The clinical manifestations and risk factors for developing coronary artery abnormalities (CAA) in Kawasaki disease (KD) might differ depending on age.

Materials and methods From January 2001 to July 2007, 161 patients with an age younger than 1 year (younger group) and 60 patients with an age older than 5 years (older group) were diagnosed with KD at the Korea University Medical Center. Their medical records were reviewed retrospectively and the two groups were compared in terms of a number of variables commonly associated with the development of CAA, including clinical manifestations and laboratory findings.

Results While the overall incidence of KD-associated CAA in our hospital was 6.7%, CAA developed in 20 (12.4%) of the younger group and ten (16.7%) of the older group, respectively. The CAA (+) cases of the younger group had a longer duration of total fever (9.1 ± 3.3 vs 6.3 ± 1.9 days, $p = 0.002$) and showed fewer diagnostic symptoms (3.0 ± 1.2 vs 4.3 ± 1.1 , $p < 0.001$) than the CAA (-) cases. The CAA (+) cases of the older group had a longer duration of total fever (14.1 ± 10.4 vs 6.5 ± 1.9 days, $p = 0.045$), especially with respect to post-intravenous gamma globulin (IVGG) fever (7.9 ± 9.6 vs 1.1 ± 0.8 days, $p = 0.052$), and had higher total white blood cell counts, erythrocyte sedimentation rates,

C-reactive protein levels, total bilirubin levels, and Harada scores and lower serum albumin and sodium levels than the CAA (-) cases. Multivariable logistic regression analysis revealed that the factors that were associated significantly with the development of CAA were the number of total symptoms (OR=0.494, 95% confidence interval (CI)=0.281–0.871, $p = 0.015$) in the younger group and the duration of post-IVGG fever (OR=1.958, 95% CI=1.098–3.492, $p = 0.023$) and the Harada score (OR=3.455, 95% CI=1.012–11.796, $p = 0.048$) in the older group.

Conclusion Incomplete clinical manifestations in the younger group and IVGG nonresponsiveness in the older group are associated with the development of KD-associated CAA. These age-specific characteristics could aid the customization of the diagnostic and therapeutic strategies of KD, thereby helping to improve the outcome of this disease.

Keywords Kawasaki disease · Coronary abnormalities · Risk factor · Age · Incomplete manifestation · Intravenous gamma globulin nonresponsiveness

Abbreviations

KD Kawasaki disease
IVGG intravenous gamma globulin
CAA coronary artery abnormalities
CRP C-reactive protein
ESR erythrocyte sedimentation rate
BNP B-type natriuretic peptide

Song and Yeo had equal contribution to this work.

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Introduction

Kawasaki disease (KD) is an acute febrile disease that largely affects young children and is characterized by