Optimal timing of initial treatment in severe Kawasaki disease: A sub-analysis of the RAISE study.


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Introduction: Kobayashi and colleagues showed that addition of prednisolone to the standard regimen of intravenous immunoglobulin improves coronary artery outcomes in patients with severe Kawasaki disease in Japan (RAISE study). The purpose of this study was to evaluate the relationship between the timing of initial treatment and clinical outcome in the same patients.

Methods: In the RAISE study, a total of 242 children with severe Kawasaki disease were randomised at 74 centers in Japan between 2008 and 2010, to intravenous immunoglobulin plus oral aspirin (group G, n=121) or intravenous immunoglobulin plus intravenous prednisolone followed by oral prednisolone (Group P, n=121). Z score of the proximal right coronary artery (RCA), the left main coronary artery (LMCA), and the proximal left anterior descending artery (LAD), and the maximum Z score of coronary arteries were estimated at weeks 1, 2, and 4. In this study, patients who received treatment at day 4 or earlier (group 1) were compared with those who received treatment at days 5 to 8 of fever (group 2) both in group G and group P. We did analyses with JMP9 (SAS Institute).

Results: Both in group G and group P, there was no significant difference in the needs of additional rescue therapy, relapse, and the total doses of immunoglobulin between group 1 and group 2. Both in group G and group P, absolute diameters of RCA, LMCA, and LAD were significantly lower in group 1 than in group 2 (P <0.05; ANOVA). In group P, maximum Z score of LMCA was significantly lower in group 1 than in group 2 (P <0.05; ANOVA). In group G, there was no significant difference in Z scores, maximum Z scores, and delta Z scores of coronary arteries during the study period between group 1 and group 2.

Conclusions: Optimal timing of initial treatment still remains controversial. In severe cases of Kawasaki disease, early treatment of KD resulted in lower absolute diameter of coronary artery both in group P and group G, and in lower maximum Z score of LMCA in group P.