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**Relationship between Inflammation and Oxidative Stress of Kawasaki Disease in Acute Phase**

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**Background:** In Kawasaki disease, the vicious circle of reactive oxygen species (ROS) and inflammations is formed. The ROS were generated excessively by abnormally appearance of various inflammatory mediators, and these mediators are induced by excessive ROS. We measured reactive oxygen metabolites (ROM) and biological antioxidant potential (BAP) as oxidative stress markers and various cytokines as inflammatory markers to study on the relation between oxidative stress and inflammation.

**Methods:** We measured oxidative stress markers (ROM and BAP) and inflammatory markers (hs-CRP, IL-1,2,6, and TNF- $\alpha$ ) in 19 KD patients (0Y10M-5Y10M) in acute phase. 13 patients are favourable and 6 patients are unfavourable to IVIG. Blood samples were obtained before and after IVIG treatment.

**Results:** ROM and all inflammation markers decreased in parallel with the clinical findings in the IVIG favourable group. However, in the IVIG unfavourable group, the value of hs-CRP and IL-6 as sensitive inflammation markers decreased, but ROM and IL-1, 2, did not significantly reduce in values. The value of TNF- $\alpha$  significantly decreased in the IVIG favourable group, otherwise slightly increased in the IVIG unfavourable group.

**Conclusions:** The difference between two groups in the dynamics of inflammation markers and ROM suggested that oxidative stress may take part in the formation of acute vasculitis through another pathway independent to inflammations, as an indirect inflammation promotion factor. This study also showed that the anti-TNF- $\alpha$  treatment may be useful for IVIG unfavorable patients.