


VASCULITIS SYNDROMES

Diagnostic and prognostic roles for T-cell markers in Kawasaki disease

“ Prompt recognition and treatment of Kawasaki disease is essential ”

Measurement of activated T cell populations in peripheral blood could speed up the diagnosis of Kawasaki disease, according to new findings just published by Chinese researchers in *Clinical Immunology*. “A serum percentage of CD8⁺HLA-DR⁺ T cells >8.1% [at admission] had a sensitivity of 85.2%, a specificity of 100.0%, a positive predictive value of 100.0% and a negative predictive value of 62.5% with respect to the diagnosis of [Kawasaki disease],” the report by Ye *et al.* states.

The researchers compared T cell activation profiles in peripheral blood samples obtained at admission

from patients with Kawasaki disease admitted to a single Chinese hospital and samples from age-matched and sex-matched healthy controls undergoing routine physical examination. T cell activation profiles were also obtained from patients with Kawasaki disease 2–3 days after treatment with 2.0 mg/kg intravenous immunoglobulin (IVIG), and from IVIG-resistant patients before and after successful steroid therapy.

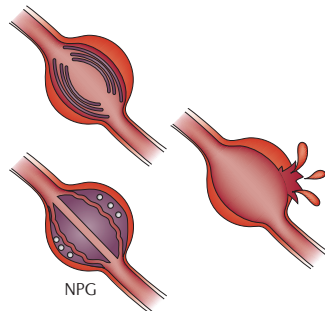
Ye *et al.* found that the percentage of CD8⁺HLA-DR⁺ T cells decreased substantially with effective treatment. Lack of response to IVIG treatment was predicted by the ratio of CD8⁺HLA-DR⁺ to CD8⁺CD69⁺ T cells at admission. “The greater the degree of CD8⁺ T cell activation, the greater the chance of IVIG resistance,” the researchers write.

Prompt recognition and treatment of Kawasaki disease is essential to prevent the development of life-threatening cardiovascular complications. Notably, in this study by Ye *et al.*, the incidence of coronary artery lesions was significantly

higher in IVIG-resistant than in IVIG-sensitive patients (50% versus 18%). “IVIG functions by inhibiting CD8⁺ T cell activation, but if the level of CD8⁺ T cell activation is too high, IVIG exhibits only limited effectiveness,” the report explains.

No laboratory tests currently exist for Kawasaki disease and its characteristic clinical symptoms (fever, rash, enanthema, conjunctival injection and cervical adenitis) might not appear for several days. Moreover, some patients develop too few symptoms to fulfil the clinical diagnosis: 34 of 162 patients (21%) in the study by Ye *et al.* had such ‘incomplete’ Kawasaki disease. “Specific laboratory diagnostic indices are urgently needed,” the paper cautions.

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ORIGINAL ARTICLE Ye, Q. *et al.* Intravenous immunoglobulin treatment responsiveness depends on the degree of CD8⁺ T cell activation in Kawasaki disease. *Clin. Immunol.* **171**, 25–31 (2016)

FURTHER READING Shulman, S. T. & Rowley, A. H. Kawasaki disease: insights into pathogenesis and approaches to treatment. *Nat. Rev. Rheumatol.* **11**, 475–482 (2015)