Roles of peripheral B1 cells in the individualized treatment of adult idiopathic thrombocytopenic purpura


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ABSTRACT. We aimed to explore the changes of peripheral B1 cells before and after treatment of adult idiopathic thrombocytopenic purpura (ITP) and to investigate the association of these changes with the disease condition and prognosis. Ninety-seven ITP patients were divided into the effective or ineffective groups, based on their response to hormone therapy. Forty healthy volunteers were enrolled into the control group (HC). The percentages of CD19⁺ cells, B1 cells, and platelet-associated immunoglobulin (PAIg) in peripheral blood from healthy volunteers and ITP patients before and after treatment were evaluated, and blood platelet (PLT) counts were determined. The percentages of CD19⁺ cells [(21 ± 10.0) vs (11.2 ± 7.1)%], B1 cells [(8.85 ± 5.23) vs (2.2 ± 1.3)%], and PAIg [(28 ± 19) vs (11.7 ± 8)%] in whole blood from ITP patients before treatment were significantly higher than those in whole blood from healthy controls (P < 0.05). Before treatment, the percentage of B1 cells and PAIg in ITP patients was negatively correlated with the PLT level (r = -0.89, P < 0.05 and r = -0.814, P < 0.05, respectively). Further, the B1 cell percentage was positively associated with the PAIg percentage in ITP patients before treatment. In the effective group,
the B1 cell percentage was reduced sharply at 1 month after treatment 
[(2.45 ± 1.75) vs (8.74 ± 5.04)%, P < 0.05)], so as at 3 and 6 months. 
However, in the ineffective group, there was no difference in the B1 cell 
percentage before and after treatment [(7.9 ± 5.6) vs (8.76 ± 5.26)%].

This obvious association of changes in peripheral B1 cells with disease 
condition and prognosis in ITP patients may be of certain clinical 
significance for guiding the individualized treatment of ITP.

**Key words:** Idiopathic thrombocytopenic purpura; B1 cells; 
Individualized treatment