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Fas/FasL in the immune pathogenesis of severe aplastic anemia

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ABSTRACT. Fas/FasL protein expression of bone marrow hematopoietic cells was investigated in severe aplastic anemia (SAA) patients. Fas expression was evaluated in $CD34^+$, $GlycoA^+$, $CD33^+$, and $CD14^+$ cells labeled with monoclonal antibodies in newly diagnosed and remission SAA patients along with normal controls. FasL expression was evaluated in $CD8^+$ cells in the same manner. In $CD34^+$ cells, Fas expression was significantly higher in the newly diagnosed SAA group (46.59 ± 27.60%) than the remission (6.12 ± 3.35%; $P < 0.01$) and control (8.89 ± 7.28%; $P < 0.01$) groups. In $CD14^+$, $CD33^+$, and $GlycoA^+$ cells, Fas levels were significantly lower in the newly diagnosed SAA group (29.29 ± 9.23, 46.88 ± 14.30, and 15.15 ± 9.26%, respectively) than in the remission (47.23 ± 31.56, 67.22 ± 34.68, and 43.56 ± 26.85%, respectively; $P < 0.05$) and normal control (51.25 ± 38.36, 72.06 ± 39.88, 50.38 ± 39.88%, respectively; $P < 0.05$) groups. FasL expression of $CD8^+$ cells was significantly higher in the newly diagnosed SAA group (89.53 ± 45.68%) than the remission (56.39 ± 27.94%; $P < 0.01$) and control (48.63 ± 27.38%; $P <0.01$) groups. No significant differences were observed between the remission and control

groups. FasL expression in $CD8^+$ T cells was significantly higher in newly diagnosed patients, and $CD34^+$, $CD33^+$, $CD14^+$, and $GlycoA^+$ cells all showed Fas antigen expression. The Fas/FasL pathway might play an important role in excessive hematopoietic cell apoptosis in SAA bone marrow. Furthermore, $CD34^+$ cells are likely the main targets of SAA immune injury.

Key words: Severe aplastic anemia; Fas/FasL; Apoptosis

