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Intravenous immunoglobulin selectively decreases circulating autoantibodies in pemphigus.

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BACKGROUND: Autoantibody-mediated diseases such as pemphigus are caused by a single or very limited number of pathogenic autoantibodies. A major problem with all current therapies for these diseases is that they target all antibodies rather than selectively targeting only pathogenic antibodies. The following study was conducted to confirm observations made in a limited number of patients that suggest intravenous immunoglobulin (IVIg) may be able to selectively lower serum levels of only abnormal autoantibodies. **METHODS:** The study was conducted in 12 patients who received IVIg for the treatment of recalcitrant pemphigus. Serum levels of antibodies to desmoglein 1 (Dsg 1) and desmoglein 3 (Dsg 3) were measured by enzyme-linked immunosorbent assay immediately before IVIg treatment and following a median of 2 cycles (range, 1-3) of treatment. As control, serum levels of several normal antibodies (against herpes simplex virus types 1 and 2, mumps, and varicella) were measured concurrently. **RESULTS:** Within a median of 2 weeks following the last cycle of IVIg serum, anti-Dsg 3 declined in all patients who tested positive at baseline and in 8 of 10 (80%) patients testing positive for anti-Dsg 1. On average, anti-Dsg 3 decreased by 45% and anti-Dsg 1 by 32%. By contrast, serum levels of the 4 normal antibodies increased in almost all patients, by an average of 408% ($P < .001$). **LIMITATIONS:** Correlation of clinical response to treatment with IVIg was not performed. The sample size was limited. **CONCLUSION:** These results indicate that IVIg can selectively and markedly decrease serum levels of abnormal antibodies in pemphigus without decreasing the levels of normal antibodies. Thus IVIg appears able to achieve the ideal goal of treatment in autoantibody-mediated diseases--selectively removing from the circulation only those antibodies that cause the disease.

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