Intravenous Immunoglobulin for Group A Streptococcal Toxic Shock Syndrome: A Reassessment of Efficacy

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Background: Intravenous immunoglobulin (IVIG) clinical efficacy is controversial in group A streptococcal (GAS) toxic shock syndrome (TSS). The aim of this study is to compare mortality in patients with GASTSS receiving IVIG and those who did not.

Method: All adults with GASTSS occurring in Ontario have been identified from Jan.1995-Dec.2003. We excluded patients who: died≤24hrs of admission, died prior to diagnosis and therapy ordered, treated in hospitals<50 beds, likely to die ≤30 days of other causes. Main outcome was all-cause 30-day mortality.

Results: 195 patients were included, from which 70% (137) received IVIG. Patients were similar in both groups in regard to gender, mean APACHEII score, median time before diagnosis, immunodeficiency, treatment with an anti-streptococcal β-lactam. Patients who received IVIG were: younger (51vs.63;p<.01), had less chronic disease (9%vs.34%;p<.01), more likely to receive clindamycin (100%vs.81%;p<.01) or vasopressors (80%vs.58%;p<.01), more frequently infected with M1 types (48%vs.31%;p=0.04), more likely to have a necrotizing fasciitis (58% vs. 24%; p<.01). In univariate analysis, age, chronic system disease, SOFA score at day 1 and surgery were associated with mortality. Mortality was 27% in the IVIG group vs. 40% in the non-IVIG group [OR 0.6(0.3-1.1);p=.11]. Independent predictors of mortality were: age [OR 1.05(1.03-1,07);p<.01], SOFA score at day 1 [OR 1.2(1.1-1.3);p<.01] and surgical procedures [OR 0.3(0.2-0.6);p<.01].

Conclusions: After decreasing selection bias by excluding patients who were less likely to receive IVIG and adjusting for confounding we found no impact of IVIG on mortality. Considering that patients who received IVIG were younger, had less comorbidities, received more clindamycin, our study strengthens the lack of data supporting IVIG in GASTSS and prompts the completion of a randomized controlled trial.

Presented At:
48th Annual Interscience Conference on Antimicrobial Agents and Chemotherapy , Washington, DC, 10/25/2008.