

Severe tetanus in immunized patients with high anti-tetanus titers

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Abstract

Severe (grade III) tetanus occurred in three immunized patients who had high serum levels of anti-tetanus antibody. The disease was fatal in one patient. One patient had been hyperimmunized to produce commercial tetanus immune globulin. Two patients had received immunizations 1 year before presentation. Anti-tetanus antibody titers on admission were 25 IU/ml to 0.15 IU/ml by hemagglutination and ELISA assays; greater than 0.01 IU/ml is considered protective. Even though one patient had seemingly adequate anti-tetanus titers by in vitro measurement (0.20 IU), in vivo mouse protection bioassays showed a titer less than 0.01 IU/ml, implying that there may have been a hole in her immune repertoire to tetanus neurotoxin but not to toxoid. This is the first report of grade III tetanus with protective levels of antibody in the United States. The diagnosis of tetanus, nevertheless, should not be discarded solely on the basis of seemingly protective anti-tetanus titers.