

Do botulinum toxin A neutralizing antibodies increase the risk for botulinum toxin B neutralizing antibodies? Two case studies

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Objective: To clarify the relationship between botulinum toxin (bot tox) A & B neutralizing antibodies (A & B Neut Ab) and resistance.

Methods: From 84 patients with cervical dystonia (CD) periodically monitored for A Neut Ab done in 5 laboratories and 23 patients for B Neut Ab done in 2 laboratories, two patients with both A & B Neut Ab were noted and analyzed. Each patient had at least 1 FTAT & FTBT and between them 22 A Neut Ab and 10 B Neut Ab determinations between 1994 and 2002.

Results:

Patient 1: onset focal CD age 60 in 1977. First Rx bot tox A 9/91. After 8 exposures, total dose 1800 u Lot 79 Botox[®], clinical resistance and + A Neut Ab 9/94. First Rx bot tox B 10/95. After 5 exposures, total dose 55,000 u, clinical resistance and + B Neut Ab 5/99.

Patient 2: onset CD + brachial/axial dystonia age 15 in 1971. First Rx bot tox A 12/90. After 5 exposures, total dose 1437 IU Lot 79 Botox[®], clinical resistance and + A Neut Ab 5/93. Four years later, A Neut Ab-, re-Rx'd successfully bot tox A 400 IU but in 4 weeks A Neut Ab reappeared. First bot tox B Rx 9/94. After 6 exposures, total dose 80,000 u clinical resistance and + B Neut Ab 9/99. As of 2/02, both patients remain B Neut Ab+, patient 1 still A Neut Ab+. 11/01 patient 2 A Neut Ab-, successfully re-Rx'd bot tox A with concurrent mycophenolate, A Neut Ab pending.

Conclusion: There may be an incremented risk for persisting B Neut Ab in the presence of A Neut Ab. A Neut Ab cleared again in patient 2, despite B Neut Ab presence, whereas patient 1 remains also A Neut Ab+. Genetic factors, perhaps revealed by HLA typing, may present a predisposition to Neut Ab generation. Whether B Neut Ab represent a risk for A Neut Ab formation is undetermined.

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