Infant Botulism Treated With Equine Botulism Antitoxin: A Case Report

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Background
Infant Botulism (IB) results from absorption of botulinum neurotoxins (BoNTs) produced in situ by Clostridia colonizing the intestinal lumen and it is reported in infants less than one year old (1, 2). BoNTs induce skeletal muscle paralysis by blocking presynaptic acetylcholine release (3). The clinical onset is insidious and characterized by constipation, difficulty in sucking, progressive weakness and difficulty in breathing (1, 2). Figures show the available therapies for IB.

Figure 1, figure 2. These figures describe the modalities of botulism treatment in Italy, which is based on the administration of the “Botulism Antitoxin Behring®” (Novartis).

Figure 3. Human-derived anti-botulism toxin antibodies that is approved by the U. S. Food and Drug Administration for the treatment of infant botulism types A and B in U.S.A.

Figure 4. BabyBIG® vs. Botulism Antitoxin Behring®

Case Report
A 5-month old baby was admitted to the Pediatric Department for constipation, difficulty of sucking and weak cry. Medical history was negative for perinatal or delivery complications and symptoms were started after hexavalex vaccine administration. During the hospitalization ptosis, strabismus, mydriasis, lethargy and weak muscular body control were noted (Figure 5). The patient received corticosteroids, antibiotics, fluids and antiviral therapy. Clinical course improved quickly and the baby was discharged seven days later. During the programmed follow-up (10 days later) constipation and difficulty in sucking and feeding were documented. Further investigation revealed that the child had ingested homemade honey: IB was suspected. Analytical determinations confirmed clinical diagnosis of botulism, as Clostridium botulinum type A was detected in rectal swabs, while honey samples resulted negative. As suggested by Rome Poison Control Centre (PCC) and in agreement with Pavia PCC, Trivalent-Equine-Antitoxin (TEqA, 750 IU-anti-A, 500 IU-anti-B, 50 IU-anti-E per ml; 10 ml/kg along 2 hours) was administered. Patient was moved to the Pediatric Intensive Care Unit and his clinical conditions quickly improved. After one month the baby was discharged without sequelae (Figure 6).

Conclusion
This case-report highlights: i) the difficulty of an IB diagnosis as it is a rare and little-known syndrome with subclinical onset, ii) the need for a more accurate training for physicians and pediatricians which may be involved in IB management, iii) the safety of TEqA in IB treatment, iv) that homemade honey consumption is not the only cause of IB, but the contact with dust should be investigated. In this case, indeed the most likely source of intoxication was the dust settled on the clothes of baby’s father who works as a bricklayer (4).