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The efficacy of dose increments of Botulinum Toxin A in the treatment of childhood esotropia

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Background: Botulinum toxin is known to have a powerful chemo denervation effect, and it is a well-established alternative to incisional surgery for strabismus. This study aims to investigate the efficacy of dose increments of Botulinum Toxin A (BTA) for the treatment of specific ranges of angle deviation.

Methods: This was a prospective study that included patients presenting with esotropia to Dhahran Eye Specialist Hospital between 2016 and 2020, who were managed by a single surgeon. Botulinum toxin was given in different dosages (2.5, 5, 7.5, 10 international units (IU)) according to the size of deviation (11–19, 20–29, 30–39, and \geq 40 prism diopters (PD)), respectively. A successful outcome was defined as deviation \leq 10 PD in the last visit (a minimum of 6 months) following a single injection.

Results: A total of 56 patients with esotropia were included. The mean pre-treatment angle of deviation was 38.6 ± 2.5 PD. BTA injections in a dose of 2.5 IU for the 11–19 PD angle of deviation showed the highest rate of successful outcomes (75%). According to the type of esotropia, partially accommodative esotropia showed the best response to the use of dose increments (59%). The incidence of ptosis post-BTA injection was the least (37.5%) with the smallest dose (2.5 IU).

Conclusion: BTA usage in dose increments is safe, efficient, and might be more cost effective with less incidence of BTA associated complications. Different esotropia diagnoses have different clinical responses. However, larger studies are necessary to better predict the outcome of using dose increments.

Biography

Khalid Shuail Alotaibi has graduated from Dammam University, Saudi Arabia in 2014 and is now currently working as Ophthalmology Resident R4 in Saudi Ophthalmology Program.

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