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LETTER TO THE EDITOR

Treatment of palmar hyperhidrosis with needle-free injection of botulinum toxin A

Laura Patakfalvi · Antranik Benohanian

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Letter to the editor:

We read with great interest the article ''Treatment of palmar hyperhidrosis with botulinum toxin type A: results of a pilot study based on a novel injective approach" [1]. We praise the authors' new injective approach using a needle adapter to reduce pain and hand grip weakening. The needle adapter prevents Botulinum Toxin type A (BoNT/A) from reaching deeper layers, producing less muscle weakening.

The authors briefly discussed the treatment of palmar hyperhidrosis with needle-free (jet) injector, the MED-JET®, requiring the anesthetic use. There are advantages to using needle-free anesthesia, prior to BoNT/A needle injection, as opposed to direct needle-free injection of BoNT/A: (a) Needle-free injection can waste up to 5 % of BoNT/A through splash and splatter (b) Delivery through a pressurized injector causes agitation, decreasing its efficacy. Newer models of jet injectors used with appropriate parameters reduce this waste [3]. Shome et al. [5] recently reported that agitation does not affect the efficacy of BoNT/A.

Direct jet injection of BoNT/A is indicated for palmar hyperhidrosis in the needle-phobic patient. The rapidity and lack of needle use decrease apprehension. A vial of 100 units of BoNT/A is reconstituted in 5 ml of preserved saline. The driving pressure of the MED-JET® is set to 140 pounds per square inch (psi) and the volume is set to 0.1 ml per spurt, delivering two units per spurt. The pressure is gradually increased with 10 psi increments until a subepidermal wheal is formed. Most procedures are accomplished with a driving pressure of 140 psi.

Traditional jet injectors like the Dermojet® are spring-loaded and have a fixed driving pressure of more than 1,400 psi. According to Mitragorti, these devices cause more pain, due to their deeper penetration level [2]. Naumann et al. [4] have used the Dermojet® safely to inject BoNT/A directly into the skin for plantar hyperhidrosis, but do not advocate its use for palmar hyperhidrosis due to the potential damage to superficial nerves and vessels.

The MED-JET, powered by carbon dioxide, has pressure settings ten times lower than that of traditional jet injectors. Higher driving pressures, higher volumes per spurt, wider nozzle diameters and shorter distances between the tip of the nozzle and the skin surface correlate with higher pain sensitivity and nerve or vessel damage. Further research is needed to objectively identify measurable parameters to insure safe and effective outcome in BoNT/A jet injection.

L. Patakfalvi
Department of Medicine, McGill University, Montreal, QC, Canada

A. Benohanian (✉)
Division of Dermatology, Department of Medicine, St-Luc Hospital- Montreal University Hospital Center, 264, Boul. René-Lévesque East, Montreal, QC H2X 1P1, Canada
e-mail: info@benohanian.com

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