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**Cryoanalgesia with a CoolSense Device in Patients Treated with Botulinum Toxin-A for Palmar-Plantar Hyperhidrosis: A Self-Controlled Study**

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Sir,

Botulinum Toxin type A (BTX-A) is considered a safe and effective method of treatment for focal hyperhidrosis of the palms and soles. Pain is the main disadvantage of this treatment, and may limit its use in less tolerant patients. Nerve block, regional anesthesia, ice packs, dichlorotetrafluorethane spray, dilution of BTX-A with lidocaine and jet injections have all been used to decrease the pain [1–4]. Wainstein et al. [5] used the CoolSense device for finger pricking while measuring blood glucose levels in diabetes patients, whereas Ragg et al. [6] used CoolSense for intravenous cannulation in children. The aim of the study was to assess the pain rating on patients with palmar or plantar hyperhidrosis treated with BTX-A. A dichlorotetrafluorethane spray was used for cryoanalgesia on one palm or sole and CoolSense on the other.

The CoolSense™ device (CoolSense Medical Ltd., Tel Aviv, Israel) is a topical applicator that is used to anaesthetize the skin before a painful procedure is performed. It is a handheld device with a temperature-controlled head that acts on application, without chemicals, to cool and anaesthetize the site of injection.

The study was conducted on 20 patients with hyperhidrosis of their palms and 6 patients with hyperhidrosis of their soles. The pain was assessed by the patients using a numeric rating scale from 0 to 10. Patients were told that 10 represents the most severe pain. Possible side effects were also evaluated. A dichlorotetrafluorethane spray was applied for 5 s before each injection on the left palm or sole, whereas CoolSense device was used for 5 s on the right palm or sole (Fig. 1). At the end of each session, patients were asked to rate the level of pain in both areas.

Ten out of the 20 patients with palmar hyperhidrosis reported a 50% decrease in the intensity of pain, 9 patients reported a 25% reduction of pain, and 1 patient reported increased pain on the hand pretreated with the CoolSense device when compared to the cryoanalgesia obtained with the dichlorotetrafluorethane spray on

the other hand. Three out of the 6 patients with plantar hyperhidrosis reported a 50% decrease in the intensity of pain and 1 patient reported a 25% reduction of pain. When comparing the cryoanalgesia obtained with CoolSense to the cryoanalgesia of the dichlorotetrafluorethane spray, one patient reported no difference in pain severity between the 2 methods and 1 patient reported increased pain when using the CoolSense device (Table 1).

The side effects of the CoolSense device were mild. Three patients with palmar hyperhidrosis had erythema, 3 reported a burning sensation, and the other 14 patients presented no side effects.



**Fig. 1.** Application of CoolSense device for 5 s before each BTX-A injection. BTX-A, Botulinum toxin type A.

**Table 1.** Reduction (%) of the intensity of pain in patients treated with BTX-A for palmar or plantar hyperhidrosis when comparing cryoanalgesia with the CoolSense device vs. the dichlorotetrafluorethane spray

	Palmar hyperhidrosis (total, n = 20), n (%)	Plantar hyperhidrosis (total, n = 6), n (%)
<i>Intensity of pain</i>		
50% reduction of pain	10 (50)	3 (50)
25% reduction of pain	9 (45)	1 (16.6)
Same pain	0 (0)	1 (16.6)
Increased pain	1 (5)	1 (16.6)
<i>Side effects in patients using the CoolSense device</i>		
No side effect	14 (70)	5 (83.3)
Redness	3 (15)	0 (0)
Burning sensation	3 (15)	1 (16.6)

One patient with plantar hyperhidrosis reported a burning sensation, whereas the other 5 patients reported no symptoms (Table 1). All but 2 patients were satisfied by the application of CoolSense device and expressed the desire to use it again in their next session. No side effects occurred with the dichlorotetrafluorethane spray.

The CoolSense device is easy to handle, safe, and appears to provide a satisfactory alternative choice of analgesia for the BTX-A injection. Additional studies might be needed to establish the effectiveness of this method [7].

#### *Disclosure Statement*

The authors declare that they have no conflicts of interest to disclose.

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