

Cryogen Cooling Device for Anesthesia, Platelet-Rich Plasma Therapy, and Hair Loss

Platelet-rich plasma (PRP) therapy has become a popular effective modality in the treatment of hair loss for women and men.^{1,2} As with any procedure, health care providers seek to achieve optimal results, with maximum safety and comfort for patients. The optimum delivery of PRP for hair is intradermal injections. To treat the entire area of hair loss, multiple injections are needed. The injections are painful but tolerable for patients. Local anesthesia and nerve blocks are not necessary. Various devices and techniques have been used to reduce pain from vibration to cryogen. The Zimmer cooler is a cryotherapy device often used for cutaneous laser procedures that cools the skin before, during, and after the injection procedure. Cooling the skin can help to numb the area and reduce pain. Although vibration and the cooler have been helpful, improved anesthesia for patients is needed during PRP injections for hair loss.

Clinical Trial

The TargetCool system is an FDA-cleared, class II medical cooling device developed by Recens, Inc. dba CoolHealth (Figure 1). It is indicated for the reduction in pain, swelling, inflammation, and hematoma.

It has 2 infrared sensors, which provide real-time temperature reading of the surface. Providers input the

precise temperature (from -10°C to 5°C) and duration (up to 60 seconds) they want the skin to be cooled, and using its patented precision cooling technology, it sprays CO_2 cryogen and adjusts the cryogen's thermodynamic state so that skin is cooled to the exact temperature and for the exact duration previously input by the provider. As a result, a rapid, precise, and replicable temperature is achieved at the surface. A study was published showing that the pain reduction for triamcinolone injections for nodulocystic acne was statistically significant when the injection was performed while the skin was precisely cooled with the device between 0°C and 3°C ; no erythema, edema, or crusting was observed.³

Ten consecutive patients undergoing PRP for male or female pattern hair loss were treated for half the procedure with the cooler and the other half with the device. Patients were asked after the treatment to let us know which device provided them more pain relief. Nine of 10 patients preferred the new device over the cooler. The other patient reported they were equally effective. No patients had any side effects (Table 1). The device seems to be a safe effective modality for providing anesthesia during PRP treatment of the scalp.

Discussion

Platelet-rich plasma is an effective treatment modality for treating hair loss in women and men. Although effective and popular, the pain associated with injections remains a concern for some patients. Nerve blocks or field blocks with local anesthesia are not necessary. A variety of methods have been tried for optimal anesthesia from vibration and traditional laser cooler to nonablative fractional or microneedling, followed by application of PRP.⁴ To date, studies have not confirmed the efficacy of topical versus intralesional PRP. The new device represents a safe effective option for anesthesia during PRP injections for hair loss. Other clinical trials are needed to confirm its efficacy and other possible applications for anesthesia in the skin.

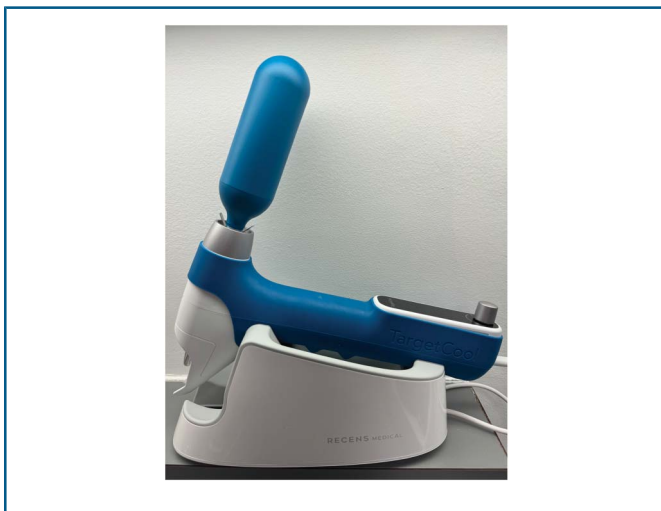


Figure 1. TargetCool system.

TABLE 1		
	Targetcool	Zimmer cooler
Patient preference for reducing pain	9 of 10	1 of 10
Side effects	None	None
Ease of use for physician	Equal	Equal
Comparison of 10 patients treated with each device		

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