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Evaluation of Different Temperatures in Cold Air Cooling With Pulsed-Dye Laser

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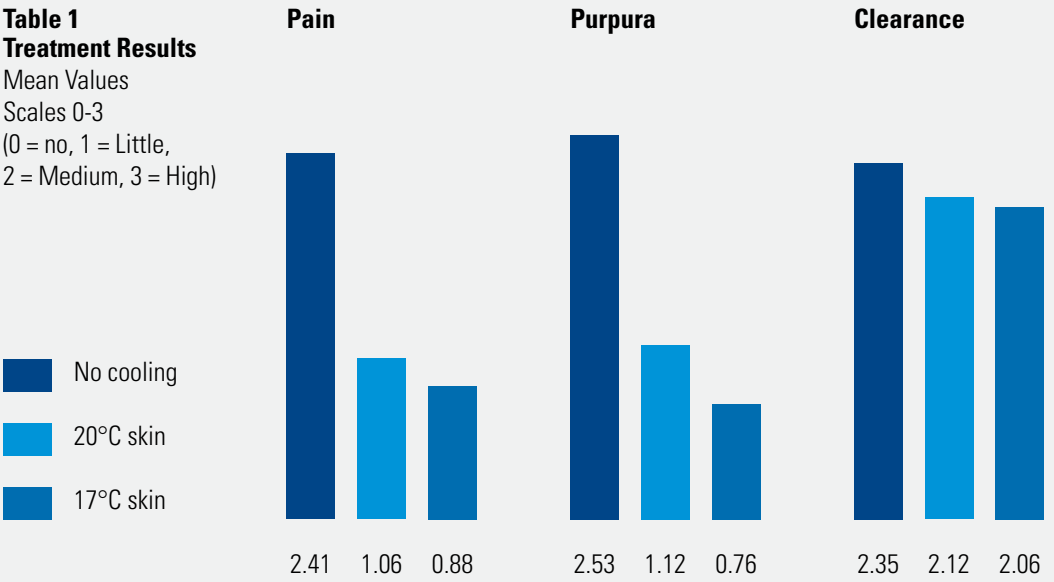
Table 1
Treatment Results
Mean Values
Scales 0-3
(0 = no, 1 = Little,
2 = Medium, 3 = High)



Background and Objectives
Cold air cooling is widely used in dermatological laser therapy. We investigated the influence of cold air cooling at different skin temperatures on therapeutic outcome and side effects of pulsed dye laser treatment of facial telangiectasia.

Study Design / Materials and Methods
From September 2002 to February 2003, 17 patients with previously untreated facial telangiectasia underwent a single treatment session with flash-lamp pulsed dye laser (3.5 J / cm^2, 585 nm, 0.45 milliseconds pulse length, 10 mm beam diameter, Cynosure 1 V). The treatment area was divided into three sub-areas: no cooling, cold air cooling to 20°C and to 17°C skin temperature. The skin temperature was monitored by a prototype infrared sensor system which controlled the temperature of the cold air stream (Cryo 5). In a prospective study, we collected data on purpura, pain, clearance, and patient satisfaction on numerical analog scales (NAS) from 0 (meaning »no«) to 3 (meaning »high«).

Results
Without cooling, purpura (2.53), pain (2.41), and clearance (2.35) were rated mediumto high. Cooling to 20°C reduced purpura (1.12) and pain (1.06), whereas the clearance (2.12) was only slightly affected. Cooling to 17°C reduced purpura (0.88) and pain (0.76) even more, the clearance (2.06) was lowered marginally. Most patients preferred cooling to 20°C skin temperature.

Conclusion
In dermatological laser therapy of facial telangiectasia, the use of cold air cooling can significantly reduce side effects and increase patient satisfaction while only slightly affecting clearance. Cooling to 20°C skin temperature proved to be a well-balanced middle course. For the practical use of cold air cooling, we thus recommend cooling to a level which the patient can tolerate without problems and to try to increase the energy densities.

Cryo

-30°C Cold Air

The skin cooling system designed for superficial laser skin procedures.
The Cryo 6 Cold Air Device is intended to minimize pain and thermal injury during laser and dermatological treatments and for temporary topical anesthetic relief for injections.

Unlike other cooling methods, such as contact cooling, cryogen spray or ice packs, the Cryo 6 can cool the epidermis before, during and after the laser energy has been applied, without interfering with the laser beam.

Easy to operate
A large display clearly indicates all treatment parameters. The Cryo 6 features a tactile glass keyboard, which permits the selection of treatment time and air flow settings.

Press Start. That's it!

An optional articulating arm facilitates hand free operation.

The light weight application hose can be connected to the Zimmer adapter to permit controlled spot cooling for hard to treat areas. Clinicians can easily regulate the air flow as needed.

Economic
Ambient room air is filtered and cooled down to - 30° C by a closed loop cooling circuit.
- Cost efficient: no consumable or additional costs
- Powerful: full day operation with no wating period after downtime.
- Practical: a custom-designed glass shelf just where you need it – for a laser, smoke evacuator or accessories.

Easy Maintenance
A monitoring system measures the defrosted water level and a defrosting feature provides smooth-running daily operation. The air filter is easy to clean, just vacuum in place when dirty.

Cryo

Technical Data

Power Supply	115 V / 60 Hz
Power Input max.	1 KW
Stand-by function	260 W / h
Protection according to IEC 601-1	Class I, Type B
MDD / MPG	Class IIa
Treatment Tube Length	6 ft.
Housing Dimensions	H 25" / W 15" / L 27"
Weight	132 lbs. (including glass plate)
Therapy Air Flow	9 levels, max. 1000 l / min

Accessories

Articulating arm

Handpiece adapter

Castor with brake

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