SAFETY AND EFFICACY OF DUAL 924 AND 975nm WAVELENGTH LASER FOR THE TREATMENT OF PRIMARY AXILLARY HYPERHIDROSIS

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* Not FDA cleared. International use only.

Background: Axillary hyperhidrosis has a devastating effect on the quality of people's lives, often resulting in severe emotional, psychological and social impairment. Options for a permanent solution, including the use of various non-selective lasers, ultrasound and microwave devices have been largely unsuccessful. We have developed an alternative that uses a fixed combination 924 and 975nm continuous wave laser energy delivered subdermally through a flexible fiber. The selectivity of the above wavelengths for desired targets makes this ideal for the procedure. The study evaluates the safety and efficacy of this novel, minimally invasive procedure for the treatment of primary axillary hyperhidrosis.

Study: Study of 22 patients (16 woman, 6 men with mean age 34 (17–45) with primary axillary hyperhidrosis. All reported grade 4 on HDSS (Hyperhidrosis disease severity scale), indicating sweating was intolerable and always interfered with daily activities. Quantitative measurement of transepidermal water loss was at least 15 times the normal range in all subjects. Exclusion criteria included anyone with Botox injections within the past year, previous axillary surgery or diabetes. After performing baseline Vapometer readings and starch iodine sweat test, a modified Klein tumescent formula was used to achieve complete anesthesia and hemostasis. Axillae were divided into sections and laser energy was delivered to each segment to an infrared skin temperature reading of 39 degrees Celsius as an endpoint. Total energy delivered ranged from 7–11 joules per side (depending on size of sweat area). Aspiration of region was then performed using specially designed cannulas. Histology obtained at various pre and postoperative stages confirmed destruction of both eccrine and apocrine sweat gland units and preservation of the epidermis and dermis.

Results: Patients underwent follow up interviews at 6–9 months post op, several in excess of one year. All study participants were extremely satisfied with their results, rating sweat reduction in excess of 90% and HDSS were uniformly reduced to level 1 (sweating never noticeable, doesn't interfere with daily activities).

Improvement in sweating was reported as immediate. One patient required a touch up procedure to one underarm, which was performed successfully at 3 months postop. Several patients had self-limited induration and lumpiness in the axillae. No complications were reported.

Conclusion: Using a fixed combination of 924 and 975mm continuous wave laser energy is a safe and effective, long term and likely permanent solution for primary axillary hyperhidrosis.