Hair removal with LEDA EPI 980 -
Decisive wavelength for hair removal for Indian skin types

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Background
Hirsutism is a common problem for which laser is the treatment of choice. The use of lasers for hair removal has been studied for a number of years. In this procedure, laser light is absorbed by melanin in the hair shaft, damaging the follicular epithelium. Several lasers with different wavelengths, pulse durations, energy densities and skin cooling systems, are currently used for hair removal. However, the ideal wavelength for darker skin types is not yet found in regards to efficacy and safety for the patients.

Objective
A clinical study to evaluate the LEDA EPI 980 (Quantel Derma, Erlangen, Germany), a Diode Laser with a wavelength of 980 nm for hair removal was conducted at Cutis. The wavelength used by LEDA EPI 980 is supposed to be effective and safe for hair removal in darker skin types. It is close to the wavelength of 1,064 nm - the currently preferred wavelength for darker skin types - but far less painful and at the same time safer than 808 nm.

Materials and Methods
100 female patients of different hair and skin types in the age group of 18 to 56 years were tested for the tolerability and efficacy of LEDA EPI 980. All patients were treated for 6 sessions with LEDA EPI 980 with contact cooling.

We used the treatment parameters of 18 - 35 ms pulse duration and a fluence of 24 - 40 J/cm², depending on skin type and hair color.

Pre and post treatment pictures were taken at each session of hair removal.

Five patients underwent a split face study to compare LEDA EPI 808 (Quantel Derma) with 808 nm wavelength and LEDA EPI 980 with 980 nm wavelength. Efficacy, tolerability and adverse events were recorded both by patients and physicians.

Clinical Images
Split face study LEDA EPI 808 / 980
The images compare the efficacy of LEDA EPI 808 and LEDA EPI 980 on darker skin (skin type 3).
The pictures where taken before the first treatment and after the 6th treatment session.
The pictures clearly show that LEDA EPI 980 is more effective on Indian skin than LEDA EPI 808.
Clinical Images LEDA EPI 980
The images show the effectiveness of hair removal with LEDA EPI 980. The number of hair is visibly reduced.

Results
After 6 sessions, all patients showed a decisive hair reduction of 60 - 80% depending on the hair color and type. The split face study comparing LEDA EPI 808 and LEDA EPI 980 clearly showed that LEDA EPI 980 is more effective, safer and faster than LEDA EPI 808 on Indian skin.

Regrowing hairs were shown to be thinner and lighter. Patient selection, proper use of the laser and appropriate parameter settings have shown to cause permanent hair reduction without damaging the epidermis even at high fluences, regardless of skin and hair type.

Conclusion
Extensive clinical use of this highpower, multi faceted, 980 nm diode laser system has shown clear benefits over standard 808 nm hair removal, probably signalling the arrival of a decisive wavelength for hair removal amongst patients with darker skin types such as Indian skin.

Note: This case study is part of an ongoing study.

Literature