

## **Lasers in Dermatology: Two-Year Experience at University Department of Dermatology and Venereology, Zagreb University Hospital Center, Zagreb, Croatia**

The Center for Laser Therapy in Cosmetic Dermatology was established at Department of Dermatology and Venereology, Zagreb University Hospital Center in October 2002. Almost all indications in cutaneous laser surgery are treated by four trained dermatologists using five different laser systems.

Diode pumped frequency-doubled solid state (Nd:YVO<sub>4</sub>) laser emits green light at a wavelength of 532 nm and therefore targets intravascular oxyhemoglobin to effect destruction of various vascular lesions. This laser is intended for treatment of the following cutaneous lesions: telangiectasias, spider nevi, senile angiomas, angiokeratomas, port wine stains and some pigmented lesions such as lentiginos. To date we have successfully performed more than 650 treatments using this laser for different indications.

Carbon dioxide laser emits laser radiation at a wavelength of 10 600 nm. It can be modified as a continuous wave, superpulsed or pulsed laser system, which makes it better adapted for cutaneous laser surgery because of the ability to effect controlled tissue ablation with limited coagulative necrosis of nonintended neighboring structures. We have used this laser for treatment of more than 500 skin lesions which included fibromas, syringomas, plane warts, common warts, seborrheic keratoses and hypertrophic scars.

Erbium:YAG laser produces a laser beam of 2940 nm wavelength, which is almost completely absorbed by cutaneous water. It is indicated for coagulation, vaporization or ablation of different skin lesions such as acne scars, syringomas, wrinkles (skin resurfacing), adenoma sebaceum, hypertro-

phic scars and xanthelasma. As this laser system allows superficial ablation of the skin with minimal thermal effect, excellent control of the depth of ablation is enabled. About 140 treatments have been performed with this laser with excellent results.

Q-switched ruby laser is a laser system which operates at a wavelength of 694 nm in the dark red range, allowing for harmless removal of pigmented lesions or tattoos by way of selective photothermolysis. We have obtained very good results in removing black, blue and green tattoos, as well as in treating lentiginos and ephelides. Since there is a significant increase in the number of people looking for a harmless technique to rid them of such unpleasant skin lesions, we have carried out more than 1200 treatments with this laser system.

A pulsed diode 810 nm laser system is effective for hair removal and treatment of some vascular lesions such as venous lake, phlebectases and hemangiomas. The application of this laser has been shown to extend the delay in hair growth in both women and men. Integrated cooling device enables cooling of the skin to prevent unwanted side effects. Excellent results have been observed after more than 1000 treatments at our Center.

Since laser therapy is now considered to be the first line treatment for numerous skin lesions, establishing the Center at our Department has improved therapeutic options for various skin conditions.

Zrinka Bukvić-Mokos, MD, MSc