

ACTION OF 904 NM DIODE LASER IN ORTHOPAEDICS AND TRAUMATOLOGY

Giuseppe Tam, M. D. Specialist in Legal/Insurance Medicine, Laser Center
Tolmezzo - Italy

Objective: The semiconductor or laser diode (GaAs, 904 nm) is the most appropriate choice in pain-reduction therapy. □ **Summary Background Data:** Low power density laser acts on the Prostaglandins synthesis, increasing the change of PGG2 and PGH2 Peroxidos into PGI2 (also called Prostacilyn or Endoprostol). The last one is the main product of the Arachidonic acid into the endothelial cells and into the smooth muscular cells of the vessel walls having a vasodilating and anti-inflammatory action. □ **Methods:** Treatment was carried out on 447 cases and 435 patients (250 women and 185 men) in the period between 20.05.1987 and 31.12.1999. The patients, whose age ranged from 25 to 70, with a mean age of 45 years, were suffering from rheumatic, degenerative and traumatic pathologies as well as cutaneous ulcers. The majority of the patients had been seen by orthopaedists and rheumatologists and had undergone x-ray examination. All patients had received drug-based treatment and/or physiotherapy, with poor results. Two thirds were experiencing acute symptomatic pain, while the others presented a chronic pathology with recurrent crises. We used a pulsed diode laser, GaAs 904 nm wavelength. Frequency of treatment: 1 application per day for 5 consecutive days, followed by a 2-day interval. In the evaluation of the results the following parameters have been considered: disappearance of spontaneous and induced pain, anatomic and functional evaluation of the joints, muscular growth, verbal rating scales, hand dinamometer, patient's pain diary. □ **Results:** Very good results were achieved especially with cases of symptomatic osteoarthritis of the cervical vertebrae, with sport-related injuries, with epicondylitis, and with cutaneous ulcers; also, last but not of least importance, with cases of osteoarthritis of the coxa. □ **Conclusions:** Treatment with 904 nm diode laser has substantially reduced the symptoms as well as improved the quality of life of the patient, thus postponing the need for surgery