LASERS

NEW APPROACHES TO TREATMENT OF VASCULAR LESIONS

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Cutaneous vascular lesions are common in both children and adults. The vast majority of these lesions respond well to laser treatment. Lasers and non-coherent intense pulse light sources (IPLS) are based on the principle of selective photothermolysis and can be used for the treatment of many vascular skin lesions. A variety of lasers has recently been developed for the treatment of congenital and acquired vascular lesions which incorporate these concepts into their design. The list is a long one and includes pulsed dye (FPDL, APDL) lasers (577 nm, 585 nm and 595 nm), KTP lasers (532 nm), long pulsed alexandrite lasers (755 nm), pulsed diode lasers (in the range of 800 to 900 nm), long pulsed 1064 Nd:YAG lasers and intense pulsed light sources (IPLS, also called flash-lights or pulsed light sources).

It’s necessary to identify the characteristics of each laser wavelength, pulse duration, and possible associated epidermal cooling. Furthermore, it is important to understand the specific characteristics of each individual vascular lesion. Together, laser treatment of cutaneous vascular lesions of the head and neck region can be optimized. Pulsed Dye Laser (PDL) is currently the gold standard treatment for port wine stains (PWS), although the degree of lesion blanching is variable and often unpredictable. This appears to be due to reformation and reperfusion of blood vessels. The type of laser or IPLS and their specific parameters must be adapted to the indication (such as the vessel’s characteristics, e.g. diameter, colour and depth). A different number of repeated treatments should be done to achieve complete results of different vascular conditions.