

**Objective:** Hemangioma is mesenchymal benign tumor formed by blood vessels. Anomalies affect up to 10% of children and they are more common in females than in males. The aim of the study was to evaluate hemangioma treatment using four different types of lasers namely Alexandrite, Er: YAG, CO2 and PDL.

**Background Data:** Argon laser was the first to be used for dermatological patients. A variety of different lasers and light sources were useful in treatment of vascular lesions e.g. KTP, Nd: YAG, CO2, PDL, and Er: YAG etc.

**Materials and Methods:** Group of 869 consecutive patients with hemangioma was retrospectively reviewed. Patients were divided into four groups according to the type of laser used: those underwent the therapy with Alexandrite, CO2, Er: YAG, and PDL. All patients were treated in one session without anesthesia application.

Ablative systems vaporized tissues until the hemangioma was removed. Non-ablative systems used one shot which destroyed the hemangioma blood vessels.

**Results:** For the treatment efficacy analysis, the following factors were evaluated: therapeutic effect, loss of pigment, and appearance of scar. From results it was evident that the therapeutic effect of all the lasers except Alexandrite was very high - almost 100%. In the CO2 and the Er: YAG laser also high percentage of side effects was observed. The best therapeutic effect, with only minor side effects has been reached by the PDL laser.

**Conclusion:** It was confirmed that PDL (595 nm; 1.5 ms; 7 mm; 9 - 11 J/cm<sup>2</sup>) had the optimal effect without scars.

**Key words:** hemangioma, PDL laser, Alexandrite laser, Erbium: YAG, CO2 laser