Abstract

This thesis focuses on the use of high-intensity lasers in the treatment of chronic scars. The theoretical part provides general information about non-invasive lasers and their application in medicine. It also describes the issue of scars and various physiotherapy methods for influencing scars.

The main purpose of the study was to record any subjective or objective changes in chronic post-operative scars (older than 3 months) after 6 applications of a high-intensity laser. A secondary goal was to compare these results with other studies.

The research involved six probands (2 men and 4 women) aged between 20 and 63 years. Participants were selected based on their registration through a created informational leaflet. All probands underwent an entrance examination before the application of high-intensity laser therapy and an exit examination after its application. This examination included an anamnesis focused primarily on the patient's scar, palpation and visual inspection of the scar with photographic documentation, the use of the Vancouver Scar Scale (VSS) and Patient and Observer Scar Assessment Scale (POSAS) questionnaires, and diagnostic sonography using a 24 MHz probe (DICOM). The therapy was conducted using the Opton Pro 25 W high-intensity laser from Zimmer.

The obtained results were highly individual, but despite the very small group of probands, certain trends in the laser’s effects (improvement in soreness, scar pliability and color, and reduction of swelling) could be observed. These trends were also confirmed when compared with other studies. Laser therapy improved the overall condition of chronic scars for most participants in both the patient and observer assessments using the POSAS scale. However, future similar research will need to include a much larger number of participants and monitor the effects over a longer period.