

Abstract

This thesis deals with the effect of High Intensity Laser on soft tissues and postsurgical scars in the ankle joint area. The thesis is divided into two parts, theoretical and practical. The theoretical part presents a summary about ankle joint traumatology and its surgical management. Further there is also information about wound healing, scar formation, their examination, assessment scales and treatments. Last but not least there is a description about the laser mechanism, effect and treatment use.

The main focus point of the practical part is to discover the effect of the High Intensity Laser used on soft tissues and postsurgical scars in the ankle joint area. A sub-objective is to evaluate the high power laser effect on pain reduction in the treated area.

Methods: There were 20 probands tested in the practical part (average age 42,3, SD \pm 13). The intervention group (n = 10) has applied High Intensity Laser Therapy (HILT) on postsurgical scars. The control group (n = 10) haven't HILT. The Observer Scar Assessment Scale (POSAS) was used for scar evaluation and pressure algometer was used for pain evaluation.

Results: There was statistically proven that High Intensity Laser Therapy has an effect on pain reduction on level of significance $\alpha = 0,05$, ($p = 0,0047$). According to the POSAS, results evaluated from the patient's perspective, there was a statistically significant difference in the intervention group when using HILT ($p = 0,0064$). The results support the claim that HILT has a positive effect on soft tissue healing and postsurgical scarring in the ankle joint area. A significant difference was not observed for the effect of the laser on soft tissues assessed on the POSAS scale according to therapist ($p = 0,1379$).

In conclusion the results show that HILT has a positive effect on pain and healing of soft tissue and postsurgical scars in the ankle joint area. Research with a larger test group is needed to obtain significant results.