

INVESTIGACIÓN - ESTÉTICA

EFFICACY OF INTENSE PULSED LIGHT AND DIODE LASER HAIR REMOVAL: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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Introduction: Long-term hair removal is a common demand in aesthetic practice, performed with different light-based technologies. Intense pulsed light (IPL) offers a lower cost and greater versatility, while diode laser (DL) is more expensive but specifically designed for epilation. There is a lack of robust clinical studies comparing these technologies under standardized conditions. Objective: The study aimed to compare the efficacy of IPL (690 nm) and DL (800 nm) in reducing axillary hair density and thickness. The research also evaluated pain, adverse effects, aesthetic perception, satisfaction, and the impact on participants' quality of life. Methodology: A randomized, controlled, double-blind clinical trial was conducted with 48 women (skin phototypes I-IV). Participants underwent four axillary hair removal sessions over a 4-week period, receiving IPL on one side and DL on the other. The variables analyzed were: hair density and thickness (via ImageJ), pain (visual analog scale), adverse effects,

satisfaction and perceived improvement (GAIS), and quality of life (WHOQOL-bref). Results: Both technologies significantly reduced hair density and thickness. However, DL showed superior results from the third session in density and the fourth session in thickness, with sustained effects for up to 30 weeks post-treatment. Discomfort was significantly higher with DL, although overall satisfaction and evaluator-perceived improvement were greater. Adverse effects were mild and transient: erythema and carbonization were more frequent with DL, while perifollicular edema predominated with IPL. No significant changes were observed in participants' quality of life. Conclusion: DL is more effective than IPL for female axillary hair removal, despite being associated with greater discomfort and a higher incidence of mild adverse effects. IPL demonstrated favorable clinical outcomes with less pain and great versatility, representing a cost-effective alternative in settings with limited budgets or where multifunctional equipment is required.

Palavras-chave: hair removal selective photothermolysis intense pulsed light diode laser randomized clinical trial.