THE CLINICAL EFFECTIVENESS AND COST-EFFECTIVENESS OF FRACTIONAL CO2 LASER IN ACNE SCARS AND SKIN REJUVENATION: A SYSTEMATIC REVIEW AND ECONOMIC EVALUATION

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Background and aims: Skin rejuvenation is one of high demand cosmetic interventions in Iran. Fractional CO2 Laser is a high power ablative laser which has variety of utilization in medicine including treatment of acne scars and rejuvenation. The aim of this study was to evaluate the safety, efficacy, and cost-effectiveness of Fractional CO2 Laser in comparison with other methods of rejuvenation and acne scar treatment.

Methods: A systematic database search including Medline (via OVID and PubMed), EMBASE, CINHAL, Cochrane Library, CRD, SCOPUS and Web of Science conducted. After screening search results, selected publications appraised by CASP and Cochrane Collaboration’s tool for assessing risk of bias and eligible studies included in the systematic review. In economic evaluation, all costs and benefits analyzed from Iran ministry of health’s perspective.

Results: From 2667 publications, two randomized control trials were eligible and included in the study. The affectivity and complications of Fractional CO2 laser were comparable with Er: YAG but Fractional CO2 laser was 14.7% (P=0.01) more effective than Q-Switched ND: YAG laser. Cost affectivity of this method was the same as other alternative lasers.

Conclusions: Fractional CO2 laser is an effective and safe method for curing several kinds of skin. Never the less there was not sufficient evidence to support its advantage. This device has equal or lower price in comparison to competent technologies except for the non-fractional ablative Co2 laser that has the same or lower price and comparable effects.