

## ABSTRACT

Gingival tissue architecture including gingival design (pink esthetics) and gingival contour plays an important role in achieving maximum smile esthetics. Physiologic melanin hyperpigmentation is negative attribute to flawless smile though it is not a medical concern. Periodontists can enhance smile esthetic through gingival depigmentation as a part of interdisciplinary treatment to yield ideal esthetics outcome. Among different treatment modalities for depigmentation of gingiva, surgical scalpel stripping remains the gold standard and diode laser has recently become the effective and reliable technique. This study was undertaken to compare the clinical effectiveness of scalpel and diode laser techniques used for gingival depigmentation. Seventeen subjects with hyperpigmented gingiva at upper anterior labial segments in age of 18-35 years were recruited. The maxillary left or right side (34 segments) was randomly assigned as depigmentation procedures using diode laser (study group) and scalpel (control group). Clinical parameters evaluated were Dummet oral pigmentation index for intensity of pigmentation, melanin pigmentation index for extent of pigmentation, Landary healing index for gingival wound healing and Visual Analog Scale for pain perception. Mann-Whitney U-test was used for statistical analysis between groups and Wilcoxon signed rank test for intragroup differences of time related variables. There was highly significant difference among clinical parameters before and after treatment in both laser and scalpel techniques ( $p \leq 0.001$ ) while non-significant difference between two techniques ( $p > 0.005$ ). This study found that diode laser makes less painful than scalpel technique in depigmentation as it just need application of topical anesthesia while scalpel method require infiltration anesthesia. Diode laser is as effective as scalpel technique in removing pigmentation assessed in terms of healing and recurrence of pigmentation. The application of diode laser in the

management of gingival melanin hyperpigmentation give appealing esthetics result and it might be useful as effective alternative innovative tool.