

**EFFECTIVENESS OF CO₂ LASER IN THE MANAGEMENT OF DYSPLASTIC
PRECANCEROUS LESIONS IN THE ORAL MUCOSA
AN ONGOING STUDY**

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The term LASER is used to denote the abbreviated term of Light Amplification by Stimulated Emission of Radiation. Carbondioxide laser is the most widely used laser energy in medicine and surgery. This laser has a spectral emission in the middle of the infra red portion, i.e. at 1,600 nm, of the electromagnetic spectrum. The energy of carbondioxide laser is heavily absorbed by water. Since soft tissues contain 70-90% water by weight it act as the primary absorbing medium. Using laser, tissues can be either incised or evaporated. Epithelial dysplasia can be regarded as a histopathological marker of malignant transformation of premalignant lesions of the oral mucosa. A decision to remove a precancerous lesion is arrived on clinical and histological criteria.

The study was designed to assess the effectiveness of carbondioxide laser in the management of dysplastic precancerous lesions and to compare two methods of treatment (ie: vaporization and excision) with regards to postoperative complications, healing time and recurrence.

Biopsy proven lesions with moderate and severe dysplasia were selected for the study. There were 6 patients (5 males and 1 female) with an age range of 43-86. Two lesions were excised and the rest were vaporized under local anaesthesia. Vaporization generally employed in less accessible areas due to the manipulation difficulties of the laser beam. The treatment caused minimal distress to all the patients up to 2-3 days after which 5 patients developed mild to moderate pain. There were no erythema or oedema around the laser wound. Complete re-epithelialization of the wound surface occurred in 4-6 weeks time without wound contraction or scar formation. The follow up period ranged from 1.5 to 29 months with a mean of 14.9 months. During the follow up period only one patient developed recurrence after vaporization at the original site. The excision specimen of one patient with severe dysplasia revealed early invasive squamous carcinoma by the evaluation of the whole specimen. Although, the initial results have been promising, conclusions cannot be made due to the small sample size. The study is currently in progress.