CHAPTER VII

ABSTRACT

This chapter gives a brief summary of the work done in this study including background, materials and methods, results and conclusions.
**Abstract**

**Background:** Concurrent chemoradiotherapy (CCRT) induced oral mucositis (OM) severely affects oral functions, nutritional status and Quality of Life of Head and neck cancer (HNC) patients. Several modalities have been tried to prevent and treat this complication but none proved to be successful until date. We used Low Level Laser Therapy (LLLT) for the prevention and treatment of CCRT induced OM.

**Methods:** This was a triple blinded study, where 221 HNC patients scheduled to undergo CCRT [Chemotherapy Dosage = 3 weekly Cisplatin 100mg/BSA on day 1, 22, 43 + Radiation Dosage = 66Gray (2Gy/fraction), 5 fractions/week, total 33 fractions for 6.5 weeks], were block randomized into laser (n=111) and control (n=110) group. Laser group patients received LLLT [Helium-Neon, $\lambda=632.8\text{nm}$, Power-density=0.024W, Average Dosage=3.5J/point, total dosage/session=28.8-90J, spot-size=1cm$^2$, 15-20min/session, 5 sessions/week] whereas control group patients received sham treatment daily prior to radiation for 6.5 weeks. Primarily OM (Radiation Therapy Oncology Group/European Organization for Research and Treatment of Cancer Scale), oral pain (Visual Analog Scale), dysphagia (Functional Impairment Scale) were assessed by a blinded assessor. In addition patient’s reported measures of OM (Oral Mucositis Weekly Questionnaire-Head and Neck), Quality of Life (Functional Assessment of Cancer Treatment- Head and Neck Questionnaire), weight loss and unplanned CCRT break were also recorded. Data was analyzed using descriptive Statistics, generalized estimating equations (GEE) and Odds ratio.

**Results:** There was significant reduction in the incidence of severe OM and its associated pain, dysphagia, and opioid analgesics use in laser than control group patients. Also patient’s reported measures of OM and quality of life scores improved significantly in laser treated patients. OM associated weight loss and unplanned CCRT break were significantly less in laser than control group patients.

**Conclusions:** LLLT decreased the incidence of CCRT induced severe OM and its associated pain, dysphagia and opioid analgesics use. Also LLLT improved patients experience with OM and QOL.