Preface

Head and Neck cancer continues to be an important public health problem among people in Indian Subcontinent. The major risk factor lies in their cultural habits of using tobacco in various forms like Betel quid, pan masala and smoking beedi etc. Several measures have been done by Various International and National Health Agencies to increase awareness among people against tobacco related health hazards like cancer. Even in India Government has banned smoking in public places. Applying high taxes on tobacco related products. With extensive campaign against tobacco related products and early screening of at risk population, the incidence of Head and neck cancer is declining globally as well as in India. Still there are large number of people which are affected with the head and neck cancer. Oropharyngeal cancers are most common among all Head and Neck cancer and are mostly Squamous cell carcinomas. Most of the patients often diagnosed to have locally advanced stages of carcinoma at time of their first reporting. In head and neck cancer patients with locally advanced stages, concurrent use of radiotherapy along with Cisplatin based chemotherapy is the choice of treatment. During the course of cancer treatment patients often develop various acute reactions like oral mucositis, skin reactions and neutropenia etc. Oral mucositis is reported as most stressful acute reaction by the patients even sometime it is more bothering them than the head and neck cancer itself. Oral mucositis severely affects patient’s daily activities like eating, chewing, drinking, swallowing, talking, and brushing. Also compromised oral functions may lead to poor nutritional status and health of the patients requiring hospitalization, opioid analgesics use, total parenteral nutrition and increased cost of treatment. Overall
Oral mucositis affects quality of life of these patients. Various modalities have been used for the prevention of oral mucositis still none of them are completely effective against it. There are several pharmacological as well as non-pharmacological agents which are under investigation in various preclinical and clinical trials against cancer therapy induced Oral mucositis. Low level laser therapy is a non-traumatic physical modality which has been used to prevent and treat the cancer therapy induced oral mucositis in various setting since early 1990s. There is a limited evidence of effectiveness of laser therapy in prevention and treatment of concurrent chemoradiotherapy induced oral mucositis. We did this study to find out the effectiveness of Low Level Helium Neon Laser therapy in the prevention and treatment of concurrent chemoradiotherapy induced oral mucositis and its associated oropharyngeal pain and analgesics need. In addition we have recorded weight loss and total parenteral nutrition need during the course of concurrent chemoradiotherapy. Parallel to these, patient’s perceptions with the oral mucositis as well their quality of life were also taken. I have tried to give detailed description of oral mucositis and Low level laser therapy in review of literature. Similarly materials and methods and results have been described in detail along with the complete discussion supported with previous existing evidences. The structure of the thesis is briefly outlined below
CHAPTER I: INTRODUCTION

- Aims and objectives of the present study

CHAPTER II: REVIEW OF LITERATURE

Chapter IIA: Head and Neck Cancer- An overview

- Basic Anatomy of Head and Neck Region (Oral Cavity in Detail).
- Carcinoma of Head and Neck- Definition, Epidemiology, Types (regional and histopathological), Risk factors.
- Treatment Modalities for Head and Neck cancer- Surgery, Radiotherapy (along with mechanism) and Chemotherapy.

Chapter IIB: Oral Mucositis- An overview

- Oral mucosa- Structure and Blood supply.
- Oral mucositis- definition, sign and symptoms, epidemiology and risk factors.
- Pathophysiology- Detailed description.
- Consequences of Oral Mucositis.
- Oral Mucositis and Quality of Life.

Chapter IIC: Low Level Laser Therapy- An overview

- Historical Background of Low Level Laser therapy.
- Components, types and mechanism of production of Low Level Laser.
- Properties, parameters of Low Level Laser.
• Contraindications.

Chapter IID: Low Level Laser Therapy for Oral Mucositis- An Updated Review

• Low Level Laser Therapy for Chemotherapy induced oral mucositis.
• Low Level Laser Therapy for oral mucositis in Head and Neck Cancer patients.
• Low Level Laser Therapy for conditioning induced oral mucositis in Hematopoietic Stem Cell Transplant patients.

CHAPTER III: MATERIALS AND METHODS

• Ethical Clearance, Study Center and Duration of the Study.
• Study design- Settings and Randomization, Blinding.
• Patients Inclusion and Exclusion Criteria.
• Concurrent Chemoradiotherapy Regimen.
• Low level laser therapy regimen- Dose and Therapy Protocol.
• Evaluation- Outcome Measures.
• Data analysis- Statistical Methods Used.

CHAPTER IV: RESULTS

• Baseline parameters.
• Low Level laser therapy impact on Oral Mucositis.
• Low Level laser therapy impact on Oral Mucositis associated Pain.
• Low Level laser therapy impact on Analgesics Use.
• Low Level laser therapy impact on Oral Mucositis associated Dysphagia.
• Low Level laser therapy impact on Weight Loss.
• Low Level laser therapy impact on Patients Reported Measures of Oral Mucositis.
• Low Level laser therapy impact on Quality of Life.
• Low Level laser therapy impact on Radiation Break.

**CHAPTER V: DISCUSSION AND CONCLUSIONS**

• Laser effects on Oral Mucositis.

• Laser effects on Oral Mucositis associated Pain.

• Laser effects on Analgesics Use.

• Laser effects on Oral Mucositis associated Swallowing Difficulty.

• Laser effects on Weight Loss.

• Laser effects on Patients Reported Measures of Oral Mucositis.

• Laser effects on Quality of Life.

• Laser effects on Radiation Break.

• Limitations and Future Recommendations.

• Clinical implications and recommendations.

**CHAPTER VI: REFERENCES**

**CHAPTER VII: ABSTRACT**

**CHAPTER VIII: APPENDICES**

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