ABSTRACT:

TITLE: “Autofluorescence Spectroscopic Analysis Of Salivary Metabolites In Patients With Potentially Malignant Disorders, Oral Cancer And Patients Under Radiotherapy”

BACKGROUND: The incident rate of oral cancer is ranked number one cancer for males and third most common cancer for females, when compared to other types of cancer in India and it affects more than 481,000 new patients worldwide\(^1\). In spite of much treatment advancements, the death rate due to oral cancer was around 45% within five years from diagnosis\(^2\). One of the reasons for this high mortality rate was due to diagnosis only at the advanced stage. The Salivary Autofluorescence spectroscopy is a new diagnostic modality with the potential to bridge the gap between clinical examination and invasive biopsy. Saliva shows presence of detectable levels of FAD, NADH fluorescence at an early stage which promises to be a potential biomarker for the detection of dysplastic changes in the squamous epithelium.

AIM:

To evaluate the efficacy of Autofluorescence of saliva as an adjunctive diagnostic aid in potentially malignant and oral carcinoma patients and also to evaluate autofluorescence as a prognostic indicator in patients treated by radiotherapy.

OBJECTIVES:

To evaluate and compare spectroscopic intensity of saliva in potentially malignant, oral cancer and patients under radiotherapy from normal saliva for efficacy of autofluorescence in early diagnosis and also to evaluate prognosis of patients under radiotherapy.

METHOD:

Unstimulated Whole saliva was collected under resting conditions in a quiet room, between 8 am and noon, patient was advised not to take any food or water for at least 1 hour. The
saliva was collected in sterile container stored in ice packs at 4°C and transported within 4-6 hrs. Saliva was subjected to laser induced autofluorescence at room temperature and spectrum was recorded.

**RESULTS:**

When spectral intensity was evaluated in potentially malignant, oral cancer and patients under radiotherapy were evaluated for efficacy in diagnosis and efficacy as prognostic indicator, Statistically significant results with p-value < 0.001 was obtained in all four groups.

**KEY WORDS:**

Autofluorescence spectroscopy, optical spectroscopy, Protophrins (PpIX). Flurophores, fluorescence intensity.