PROGNOSTIC SIGNIFICANCE OF NUTRITION AND IMMUNITY IN HEAD AND NECK CANCER- A PROSPECTIVE OBSERVATIONAL STUDY

Thesis Submitted In Partial Fulfillment of The Award of Degree of Doctor of Philosophy
In
Oncological Sciences

SUBMITTED BY   **SUPERVISOR**

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CHAPTER-6

CONCLUSIONS

6.1. Key findings

i. Malnutrition (defined as either ≥10% weight loss or BMI <18.5 or SGA score ≥40) was found in 47.1% patients pre-treatment and this proportion increased to 87.6% patients post-treatment. The median NLR (IQR) was 3 (2-4) pre-treatment and increased to 5 (3.8-8.4) post-treatment. There was statistically significant moderate positive correlation between NLR and SGA score, pre-treatment percent weight loss; moderate negative correlation between NLR and weight, BMI.

ii. The H_0 hypothesis (there is no correlation between nutritional status and systemic immunity in patients with Head and Neck Squamous Cell Carcinoma) is rejected and the alternate H_1 hypothesis (there is a positive correlation between nutritional status and systemic immunity in patients with Head and Neck Squamous Cell Carcinoma) is accepted.

iii. Malnutrition was significantly associated with failure to complete planned treatment in node positive patients and raised NLR in node negative patients. On multivariate analysis, Cox-Regression and Survival Analysis with Kaplan-Meier curves, both poor nutritional status and raised NLR were associated with poor six months progression free and overall survival.

iv. The novel low cost risk stratification models, developed in this study using clinical parameters, nutritional status and the NLR were successfully tested for internal validation as predictive for poor clinical response (failure to complete planned treatment, early disease recurrence and mortality) in patients being treated for HNSCC.

6.2. Limitations

The event rate for disease progression and mortality was low in the node negative cohort at 6 months follow up, leading to non-significant findings on multivariate analysis. To counter this limitation the patients will be followed up for further 3 to 5 years duration for events in clinical outcome.

6.3. Clinical recommendations

i. Apart from the regular clinical and disease parameters (like PS, clinical stage, pathological features, subsite etc.) patients' baseline *nutritional status* and systemic immunity marker *NLR* should be taken into account while planning the oncological management for HNSCC patients.

ii. A patient with malnutrition at the start of oncological treatment for HNSCC should be offered structured nutritional advice and regular nutritional monitoring during the ongoing active treatment to improve clinical outcomes of these patients.

iii. Systemic immunity marker NLR, as calculated from the peripheral blood sample, is a cost effective and easily available tool and should be utilized routinely to prognosticate HNSCC patients planned for treatment into high risk groups for poor clinical outcomes.

iv. The novel low cost risk stratification models developed in this study were validated internally to prognosticate patients as low, medium and high risk for poor clinical outcomes, and now need to be validated externally on different HNSCC patient populations by other researchers.