A Study of Serum Beta 2-Microglobulin (β2M) and Lipid Bound Sialic Acid (LSA) Levels in Oral Carcinoma Patients

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Abstract : Background: Oral squamous cell carcinoma (OSCC) is the most prevalent malignant tumour on a global scale. Limited research has been conducted on tumour markers in oral cancer, and additional evaluation is required for several tumour producers that show clinical promise. The present study aimed to find out the co-relation of β-2 Microglobulin and Lipid Bound Sialic Acid in oral carcinoma patients. Methodology: The present case-control study was carried out on 35 patients with histopathologically confirmed OSCC and 35 age-matched controls. Serum concentrations of 2-Microglobulin and Total Sialic Acid (TSA) in the participants were determined via ELISA and spectrophotometric technique, respectively. Results: The OSCC group consisted of 20 males and 15 females, with an average age of 58 years, while the control group comprised 18 males and 17 females, with an average age of 55 years. Elevated levels of β2-microglobulin (3.87±0.12) and LSA (73.57±2.42) were observed in OSCC patients compared to controls (2.25±0.18; 65.21±2.06, respectively). Further examination based on smoking status revealed a significant increase in both β2-microglobulin and LSA levels among smokers compared to non-smokers ($p < 0.05$). Conclusion: The study suggests a notable association between higher levels of β2-microglobulin and LSA in oral squamous cell carcinoma (OSCC) patients who smoke compared to non-smokers. This observation leads to a hypothesis that this disparity could potentially serve as a significant contributing factor to the advancement of oral cancer.

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