SDM
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"QUANTITATIVE ANALYSIS OF TISSUE EOSINOPHILS AND ITS ASSESSMENT AS A PROGNOSTIC INDICATOR IN ORAL SQUAMOUS CELL CARCINOMA."

By

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ABSTRACT

Background:

Oral squamous cell carcinoma (OSCC) is the most common cancer in India. Therefore, any innovation that facilitates early detection of this neoplasm has the potential to improve survival. Tumour associated tissue eosinophils (TATE) are believed to play a significant role in the biological behaviour of carcinoma. Association of TATE with OSCC has shown variable results ranging from favourable to unfavourable or even having no influence on prognosis. Eosinophil can be identified in tissue sections stained with Hematoxylin and eosin stain which stains the eosinophil granules pinkish to reddish in colour but sometimes identification of these cells becomes difficult among dense inflammatory infiltrate in OSCC. In such situations, special technique like special stains can be used to detect the presence of intact or degranulating eosinophils particularly in tumours. Therefore this study was conducted with an aim to evaluate the efficacy of special stain Congo red to discern eosinophils in the inflammatory infiltrate in OSCC and ascertain its role in metastatic and non-metastatic OSCC.

Material and methods:

This retrospective study included a total of 60 cases (30 each of metastatic and non-metastatic cases) of intraoral histopathologically proven cases of oral squamous cell carcinoma. . For oral squamous cell carcinoma, tissue with adequate tumour islands in the connective tissue was included. Recurrent cases of oral squamous cell carcinoma, areas of necrosis and the sections with tissue folds were excluded from the study. TATE was quantified at 40 x magnification using Hematoxylin & eosin (H&E) and Congo red stains in a systematic manner in ten high power fields and recorded as TATE/10 HPF. TATE was also compared statistically with age, sex, habit and site of the patient. Statistical analysis was made using non-parametric tests.

Results:

In both H&E stain & Congo red stain, a definite statistical increase in the TATE values in non-metastatic OSCC was noted compared to metastatic OSCC.

Congo red proved more sensitive stain than H& E stain in identification of eosinophils as it showed a definite numerical increase in the values of TATE in tissue sections stained with Congo red stain compared to H&E stain. However, there was no statistically significant difference noted with the TATE values in tissue sections stained with the two stains.

On testing the association of TATE values with age of the patient, a definite statistically significant increase in the TATE values were seen with increase in age in metastatic OSCC whereas it was not significant in non-metastatic OSCC.

Similarly no statistical significant association of TATE with location and habits of the patient in either group was noted.

Conclusion:

Congo red stain is easy to implement, cost effective, reliable and sensitive stain for identification of eosinophils. Congo red stain is one step ahead of Hematoxylin and eosin stain. Eosinophils have shown to have a favourable prognosis in OSCC and hence it is concluded that eosinophils have an important role to play in OSCC and quantitative assessment of eosinophils using Congo red stain should become a part of the routine histopathological diagnosis for OSCC.

Key words: Eosinophils, TATE, Congo red, Metastatic OSCC, Non-metastatic OSCC.