

Research paper 2

The association between the biological characteristics of papillary thyroid carcinoma and the severity of background inflammation: a histological analysis of 282 patients

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Introduction and objectives: Chronic inflammation is associated with the development and progression of some cancers. Studies carried out to determine the relationship between background inflammation and papillary thyroid carcinoma (PTC), have shown varying results. The objective was to describe and assess the degree of background inflammation in PTC and assess its relationship with some tumour characteristics.

Methodology: Haematoxylin and eosin-stained slides and reports of 282 patients diagnosed with PTC at North Colombo Teaching Hospital from 2017 to 2021 were re-examined. The degree of background inflammation was categorized into four semi-quantitative grades; 0 - no inflammation, 1- minimal inflammation with rare formation of lymphoid follicles, 2-scattered follicle formation with minor Hurthle cell changes and focal follicular destruction, 3-diffuse thyroiditis with marked follicular destruction and Hurthle cell change. The association between the grade of inflammation and the tumour characteristics were assessed using Fisher's exact test.

Results: Among the 282 cases of PTC, 2.48%, 24.11%, 35.82% and 37.59% of cases showed Grade 0, 1, 2, and 3 background inflammation respectively. The degree of inflammation showed no significant differences in association with sex ($p=0.516$), mean age of patients ($p=0.923$), multifocality versus unifocality of PTC ($p=0.711$), tumour size ($p=0.149$), extra thyroid extension ($p=0.840$), lymphovascular invasion ($p=0.840$) or nodal metastases (0.426).

Conclusion: The degree of inflammation in the background thyroid tissue in patients with PTC showed no relationship with the biological features of the tumour assessed such as tumour size, focality, extrathyroidal extension, lymphovascular invasion and nodal metastases.

Keywords: papillary thyroid carcinoma, chronic inflammation, biological characteristics

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