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Prognostic Application of Braf V600E In Papillary Thyroid Carcinoma: an Immunohistochemical Study

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SUMMARY. **BRAF gene mutations have recently been identified as a tumor initiator and is required for tumor progression in papillary thyroid carcinoma (PTC), it is a part of the RAF family, which includes ARAF, BRAF, and CRAF. BRAF is a serine or threonine-protein kinase expressed by the BRAF gene on chromosome 7q34 (the long arm of chromosome 7, region 3, band 4) that acts in RAS/RAF/MEK/ERK signaling pathways as an immediate downstream effector of RAS in signaling cascades of RAS/RAF/MEK/ERK. The aim was to evaluate BRAF over expression by the immunohistochemical method in papillary thyroid carcinoma (PTC) and follicular variant papillary thyroid carcinoma (FVPTC) in a retrospective cross-sectional study. Formalin-fixed paraffin-embedded blocks (FFPE) collected from archival samples of patients in private histopathology labs in Najaf city were involved in 40 cases, which included 27 papillary thyroid carcinoma (PTC) cases and 13 follicular variants papillary thyroid carcinoma (FVPTC) cases. All samples were stained using the immunohistochemistry method in the Middle Euphrates unit for cancer research at the University of Kufa/ Faculty of Medicine. The higher BRAF immunoexpression was found in PTC cases, followed by FVPTC. The correlation between BRAF and clincopathological variables was significantly associated with tumor focality (p = 0.01), capsular invasion (p = 0.04), and ETE (p = 0.03), but no significant correlation with tumor size (p = 0.9). BRAF V600E is of prognostic value as it correlates with tumor progression.**

RESUMEN. BRAF gene mutations have recently been identified as a tumor initiator and is required for tumor progression in papillary thyroid carcinoma (PTC), it is a part of the RAF family, which includes ARAF, BRAF, and CRAF. BRAF is a serine or threonine-protein kinase expressed by the BRAF gene on chromosome 7q34 (the long arm of chromosome 7, region 3, band 4) that acts in RAS/RAF/MEK/ERK signaling pathways as an immediate downstream effector of RAS in signaling cascades of RAS/RAF/MEK/ERK. The aim was to evaluate BRAF over expression by the immunohistochemical method in papillary thyroid carcinoma (PTC) and follicular variant papillary thyroid carcinoma (FVPTC) in a retrospective cross-sectional study. Formalin-fixed paraffin-embedded blocks (FFPE) collected from archival samples of patients in private histopathology labs in Najaf city were involved in 40 cases, which included 27 papillary thyroid carcinoma (PTC) cases and 13 follicular variants papillary thyroid carcinoma (FVPTC) cases. All samples were stained using the immunohistochemistry method in the Middle Euphrates unit for cancer research at the University of Kufa/ Faculty of Medicine. The higher BRAF immunoexpression was found in PTC cases, followed by FVPTC. The correlation between BRAF and clincopathological variables was significantly associated with tumor focality (p = 0.01), capsular invasion (p = 0.04), and ETE (p = 0.03), but no significant correlation with tumor size (p = 0.9). BRAF V600E is of prognostic value as it correlates with tumor progression.

KEY WORDS: BRAF, FVPTC, immunohistochemistry.

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