Journal of Cancer Diagnosis
ISSN: 2476-2253

The BRAF, NRAS Mutations and Clinic-pathological features of Thyroid Tumors in Mongolia

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Abstract

Objective: In this study, we aimed to study BRAFV600E and NRAS mutations among thyroid tumor patients in the Mongolian population.

Methods: Immunohistochemical staining was performed using CD56 antibodies on 59 formalin-fxed para f n-embedded (FFPE) tissue sections. DNA extractions from FFPE and fresh thyroid tumor tissues were extracted using a genomic DNA kit. An ABI 3730xl genetic analyzer was used for DNA sequencing.

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Received: 01-Mar-2023, Manuscript No: jcd-23-89422, **Editor Assigned:** 04-Mar-2023, Pre QC No: jcd-23-89422(PQ), **Reviewed:** 18-Mar-2023, QC No: jcd-23-89422, **Revised:** 22-Mar-2023, Manuscript No: jcd-23-89422(R), **Published:** 29-Mar-2023, DOI: 10.4172/2476-2253.1000172

Citation: Enkhbat B, Okdoo S (2023) The BRAF, NRAS Mutations and Clinic-pathological features of Thyroid Tumors in Mongolia. J Cancer Diagn 7: 172.

a ; M a a ; CD56 (M , 123C3.D5, ; M 1:500, S a

TC, 1 (10%) 2). 9 BRAFV600E , 8 , 5 45. (>005) [33].

CD56- TC BRAFV600E , 8 (25.8) 1 , 5 (16.1%) TI-II, 8 (24.2%) , 8 (24.2%) , 6 (17.6%) BRAFV600E CD56- CD56- (Ta 1) [30].

BRAFV600E 8 CD56- 1 CD56- .

BRAF CD56 (Ta 1) [31].

BRAFV600E . (Ta 2) R CD56 (R=0.295, 95%CI=0.033 2.654, =0.276, (F 1), III-IV (R=1.891, 95%CI=0.425 8.406, =0.403), 1 (R=4.87, 95%CI=0.549 43.183, =0.155), (R=3.84, 95%CI=0.43 34.306, =0.229), (R=3.84, 95%CI=0.43 34.306, =0.229), (R=1.75, 95%CI=0.356 8.609, =0.491), (R=1.217, 95%CI=0.262 5.661, =0.802) [32].

59 NRAS 2 (3.4%) TC (F 3). 59 T (3.4%) TC (F 3). B

P value

M a ¿ • M ¿ • M ¿a ¿ • ▼a 43,646, a ¿ ¿ 24¿ ، a ¿a M ¿a ¿ • ، a ¿ a ¿ . B • M, ¿ • ، a ¿ M ¿ • M ¿a ¿ • 59.7% A a, 20% N M ¿ a S M ¿ A • ¿a, a 15% E • M , ▼ ¿ ¿ - ¿ • a ¿ K M a, Ca a a, a I ¿a . A ¿ ¿ M ¿ M ¿ ¿ a ¿ ¿ M ¿ M M M a Na ¿ M a Ca ¿ • C ¿ • , 32 ¿a M ¿ • M ¿a ¿ • ▼ • • ¿ • 2010, _ ¿ 73 ▼ ¿a ▼ • a M 2020 [34].

I M ف , ▼ ¿ 59 a ¿ ¿ a M ▼ ¿ ¿ • M ف M _ M • ▼ ¿ _ • • , a M ¿ M ¿ a ¿ ¿ (78%) a

6. Melck A L, Yip L (2012) Predicting malignancy in thyroid nodules: molecular advances. Head Neck 34: 1355-1361.

7. Bhaijee F, Nikiforov YE (2011) Molecular analysis of thyroid tumors. Endocr Pathol 22: 126-133.

8. Rashid FA, Fukuoka J, Bychkov A (2020) Prevalence of BRAFV600E mutation in Asian series of papillary thyroid carcinoma-a contemporary systematic review. Gland Surg 9: 1878-1900.

9. Pyo JS, Kim DH, Yang J (2018) Diagnostic value of CD56 immunohistochemistry in thyroid lesions. Int J Biol Markers 33: 161-167.

10. Crnic I, Strittmatter K, Cavallaro U, Kopfstein L, Jussila L, et al. (2004) Loss of neural cell adhesion molecule induces tumor metastasis by up-regulating lymph angiogenesis. Cancer research 64: 8630-8638.

11. Dunderovic D, Lipkovski JM, Boricic I, Soldatovic I, Bozic V, et al. (2015) Defning the value of CD56, CK19, Galectin 3 and HBME-1 in diagnosis of follicular cell derived lesions of thyroid with systematic review of literature. Diagn Pathol 10: 196.

12. Shin MK, Kim JW, Ju Y-S (2011) CD56 and High Molecular Weight Cytokeratin as Diagnostic Markers of Papillary Thyroid Carcinoma. J Korean Med Sci 45.

13. Allred DC, Harvey JM, Berardo M, Clark GM (1998) Prognostic and predictive factors in breast cancer by immunohistochemical analysis, Modern pathology: an o f cial journal of the United States and Canadian Academy of Pathology. Inc 11: 155-168.

14. Frasca F, Nucera C, Pellegriti G, Gangemi P, Attard M, et al. (2008) BRAF(V600E) mutation and the biology of papillary thyroid cancer. Endocr Relat Cancer 15: 191-205.

15. Nikiforova MN, Lynch RA, Biddinger PW, Alexander EK, Dorn GW, et al. (2003) RAS point mutations and PAX8-PPAR gamma rearrangement in thyroid tumors: evidence for distinct molecular pathways in thyroid follicular carcinoma. J Clin Endocrinol Metab 88: 2318-2326.

16. Siegel RL, Miller KD, Jemal A (2019) Cancer statistics CA Cancer J Clin 69:7-10.

17. Chen X, Guo C, Cui W, Sun K, Wang Z, et al, (2020) CD56 Expression Is Associated with Biological Behavior of Pancreatic Neuroendocrine Neoplasms. Cancer Manag Res 12: 4625-4631.

18. Stanojevic B, Dzodic R, Saenko V, Milovanovic Z, Pupic G, et al. (2011) Mutational and clinico-pathological analysis of papillary thyroid carcinoma in Serbia. Endocrine journal 58: 381-393.

19. Huang M, Yan C, Xiao J, Wang T, Ling R, et al. (2019) Relevance and clinic pathologic relationship of BRAF V600E, TERT and NRAS mutations for papillary thyroid carcinoma patients in Northwest China. Diagn Pathol 14: 74.

20. Ahn D, Park JS, Sohn JH, Kim JH, Park SK, et al. (2012) BRAFV600E mutation does not serve as a prognostic factor in Korean patients with papillary thyroid carcinoma. Auris Nasus Larynx 39: 198-203.

21. Ito Y, Yoshida H, Maruo R, Morita S, Takano T, et al. (2009) BRAF mutation in papillary thyroid carcinoma in a Japanese population: its lack of correlation with high-risk clinic pathological features and disease-free survival of patients. Endocrine journal 56: 89-97.

22. Mond M, Alexiadis M, Fuller P J, Gilfllan C (2014) Mutation profle of diferentiated thyroid tumours in an Australian urban population. Intern Med J 44: 727-734.

23. Nasirden A, Saito T, Fukumura Y, Hara K, Akaike K, et al. (2016) In Japanese patients with papillary thyroid carcinoma, TERT promoter mutation is associated with poor prognosis, in contrast to BRAF (V600E) mutation. Virchows Arch 469: 687-696.

24. Kurtulmus N, Duren M, Ince U, Cengiz Yakicier M, Peker O, et al. (2012) BRAF(V600E) mutation in Turkish patients with papillary thyroid cancer: strong correlation with indicators of tumor aggressiveness. Endocrine 42: 404-410.

25. Sun J, Zhang J, Lu J, Gao J, Ren X, et al. (2016) BRAF V600E and TERT Promoter Mutations in Papillary Thyroid Carcinoma in Chinese Patients. PLoS One 11: 153-319.

26. Jin L, Sebo TJ, Nakamura N, Qian X, Oliveira A, et al. (2006) BRAF Mutation Analysis in Fine Needle Aspiration (FNA) Cytology of the Thyroid. Diagn.Mol Pathol 15.

27. Nikiforova MN, Kimura ET, Gandhi M, Biddinger PW, Knauf JA, et al. (2003) BRAF mutations in thyroid tumors are restricted to papillary carcinomas and anaplastic or poorly diferentiated carcinomas arising from papillary carcinomas. J Clin Endocrinol Metab 88: 5399-5404.

28. Rodolico V, Cabibi D, Pizzolanti G, Richiusa P, Gebbia N, et al. (2007) BRAF V600E mutation and p27 kip1 expression in papillary carcinomas of the thyroid <or=1 cm and their paired lymph node metastases. Cancer 110: 1218-1226.

29. Elisei R, Ugolini C, Viola D, Lupi C, Biagini A, et al. (2008) BRAF (V600E) mutation and outcome of patients with papillary thyroid carcinoma: a 15-year median follow-up study. J Clin Endocrinol Metab 93: 3943-3949.

30. Lupi C, Giannini R, Ugolini C, Proietti A, Berti P, et al. (2007) Association of BRAF V600E mutation with poor clinicopathological outcomes in 500 consecutive cases of papillary thyroid carcinoma. J Clin Endocrinol Metab 92: 4085-4090.

31. Jo YS, Li S, Song JH, Kwon KH, Lee JC, et al. (2006) Influence of the BRAF