HUBUNGAN EKSPRESI *SODIUM IODIDE SYMPORTER* DENGAN VARIAN HISTOPATOLOGI DAN STADIUM *PAPILLARY THYROID CARCINOMA*

TESIS

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Hubungan Ekspresi *Sodium Iodide Symporter* dengan Varian Histopatologi dan Stadium *Papillary Thyroid Carcinoma*

ABSTRAK

Rini Purnama Sari

Kanker tiroid merupakan keganasan endokrin yang paling sering terjadi yaitu sekitar 98% dari keganasan endokrin dan 1-1,5 % dari semua keganasan. *Papillary thyroid carcinoma* (PTC) merupakan kanker tiroid yang paling banyak dijumpai dengan rekurensi yang tinggi. Salah satu faktor yang mempengaruhi rekurensi *papillary thyroid carcinoma* adalah tidak efektifnya pengobatan *radioactive iodine* (RAI). Sekitar 5–15% dari kasus PTC resisten terhadap RAI ini dikenal dengan istilah *radioiodine refractory papillary thyroid carcinoma* (RRPTC). *Sodium Iodide Symporter* (NIS) merupakan glikoprotein plasma integral yang terletak pada membran basolateral tirosit berperan penting dalam pengambilan iodida oleh sel tiroid dalam terapi RAI. Penelitian ini bertujuan untuk mengetahui hubungan ekspresi NIS dengan varian histopatologi dan stadium PTC. Penelitian ini merupakan penelitian *cross sectional.* Sampel penelitian ini adalah kasus PTC dari laboratorium Patologi Anatomi RSUP Dr. M. Djamil Padang periode Januari 2022-Desember 2022 sebanyak 37 kasus. Varian histopatologi PTC dinilai berdasarkan WHO 2017 dan stadium klinis dinilai berdasarkan TNM American Joint Committee on Cancer edisi ke VIII. Ekspresi NIS dinilai melalui pulasan imunohistokimia. Analisis bivariat dilakukan dengan uji *Chi-square* dengan hasil uji statistik dianggap bermakna jika p < 0,05. Penelitian ini menunjukkan ekspresi NIS positif sebesar 13,5%. Analisis statistik menunjukkan adanya hubungan yang bermakna antara ekspresi NIS dengan varian histopatologi PTC (p=0,03). *Classic variant* menunjukkan tingkat ekspresi NIS yang lebih tinggi dibandingkan dengan varian lainnya. Namun, penelitian ini tidak menemukan hubungan antara ekspresi NIS dengan stadium PTC (p =0,61). Penelitian ini menyimpulkan terdapat hubungan antara ekspresi NIS dengan varian histopatologi PTC. Ekspresi NIS tidak berhubungan dengan stadium PTC.

Kata kunci: Papillary Thyroid carcinoma, Varian histopatologi, Sodium Iodide symporter, stadium

The Association of Sodium Iodide Symporter Expression with Histopathological Variants and Staging of Papillary Thyroid Carcinoma

ABSTRACT

Rini Purnama Sari

Thyroid cancer is the most common endocrine malignancy, accounting for approximately 98% of all endocrine malignancies and 1-1.5% of all cancers. Papillary thyroid carcinoma (PTC) is the most common thyroid cancer with high recurrence. One of the factors influencing the recurrence of PTC is the ineffectiveness of radioactive iodine (RAI) treatment. Approximately 5–15% of PTC resistant to RAI are known as radioiodine refractory papillary thyroid carcinoma (RRPTC). Sodium Iodide Symporter (NIS) is an integral plasma glycoprotein located on the basolateral membrane of thyrocytes, playing a crucial role in iodide uptake by thyroid cells in RAI therapy. This research aims to determine the association between NIS expression with histopathological variants and staging PTC. This research is a cross sectional study. The sample was a case of PTC from the Anatomical Pathology laboratory at Dr. RSUP. M. Djamil Padang for the period January 2022-December 2022 as many as 37 cases. Histopathological variants PTC were assessed based on WHO 2017 and clinical staging were assessed based on TNM American Joint Committee on Cancer VIII edition. NIS expression was assessed through immunohistochemical staining. Bivariate analysis was carried out using the Chi-square test with statistical test results considered significant if $p < 0.05$. This study revealed a positive NIS expression rate of 13.5%. Statistical analysis showed a significant association between NIS expression and histopathological variants PTC ($p=0.03$). The classic variant shows a higher level of NIS expression compared to other variants. However, this study did not find an association between NIS expression and staging of PTC ($p = 0.61$). This study concluded that there was association between NIS expression with histopathological variants PTC. NIS expression was not associated with staging of PTC.

Key words: Papillary Thyroid carcinoma, Histopathological variants, Sodium Iodide symporter, staging