

**HUBUNGAN EKSPRESI NFκB/p65 DAN HIF-1α PADA  
KARSINOMA TIROID PAPILER DAN  
KARSINOMA TIROID FOLIKULER**

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**ABSTRAK**

**Latar belakang:** Inflamasi meningkatkan risiko berbagai jenis kanker, termasuk kanker tiroid. Karsinoma tiroid memiliki insiden yang cukup tinggi yaitu 95% dari seluruh kanker endokrin. Telah lama diketahui bahwa antara karsinoma tiroid papiler (KTP) dan karsinoma tiroid folikuler (KTF) memiliki patogenesis yang berbeda, tetapi kedua karsinoma tiroid tersebut kemungkinan juga dipengaruhi oleh inflamasi dan hipoksia. *Nuclear Factor-kappa B* (NFκB/p65) merupakan faktor transkripsi yang memainkan peran utama dalam inflamasi, regulasi apoptosis, dan respon imun. Respon hipoksia pada sel dan jaringan dimediasi oleh faktor transkripsi *hypoxia-inducible factor* (HIF), yang berperan dalam perubahan metabolik sehingga mendorong adaptasi seluler pada kadar oksigen rendah.

**Tujuan:** membuktikan adanya hubungan NFκB/p65 dan HIF-1α pada KTP dan KTF.

**Metode:** Penelitian observasional analitik dengan pendekatan *cross sectional*. Sampel penelitian adalah blok parafin jaringan operasi penderita KTP dan KTF di Departemen Patologi Anatomi RSUD Dr. Soetomo Surabaya selama 1 Januari 2012-31 April 2016. Sampel diambil dengan *random sampling*. Kelompok KTP 15 sampel dan KTF 13 sampel selanjutnya dilakukan pulasan imunohistokimia dengan NFκB/p65 dan HIF-1α. Hasil penelitian dianalisis statistik dengan uji *Mann-Whitney*.

**Hasil:** Ekspresi NFκB/p65 pada KTP dan KTF tidak didapatkan perbedaan yang signifikan sedangkan ekspresi HIF-1α pada KTP dan KTF didapatkan perbedaan yang signifikan dan terdapat hubungan signifikan antara ekspresi NFκB/p65 dan HIF-1α pada KTP dan KTF.

**Kesimpulan:** Penelitian ini menunjukkan terdapat peran NFκB/p65 pada KTP dan KTF serta terdapat hubungan antara ekspresi NFκB/p65 dan HIF-1α pada KTP dan KTF.

**Kata kunci:** karsinoma tiroid papiler, karsinoma tiroid folikuler NFκB /p65, HIF-1α.

**THE CORELLATION BETWEEN  
THE EXPRESSION OF NFκB/p65 AND HIF-1α ON  
PAPILLARY THYROID CARCINOMA AND  
FOLLICULAR THYROID CARCINOMA**

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**ABSTRACT**

**Background:** Inflammation increase the risk of developing many types of cancer, including thyroid cancer. Thyroid cancer is the most common neoplasm of the endocrine system with incidence more than 95% of endocrine malignancy. It has been known that among papillary thyroid carcinoma (PTC) and follicular thyroid carcinoma (FTC) have a different pathogenesis, but both thyroid carcinoma are likely also affected by inflammation and hypoxia. Nuclear Factor-kappa B (NFκB/p65) is family of transcription factors that plays a central role in the inflammation, regulation of apoptosis, and immune response. The hypoxic response in cells and tissue is mediated by the family of hypoxia-inducible factor (HIF), these play a role in the metabolic changes that drive cellular adaptation to low oxygen availability.

**Objective:** to prove the relation between NFκB/p65 and HIF-1α in PTC and FTC.

**Methods:** Analitic observational study with cross sectional approach. The samples were paraffin blocks of PTC and FTC stored in the Departement of Pathology Dr. Soetomo hospital during Januari 2012-April 2016. The expression of NFκB/p65 and HIF-1α was determined by immunohistochemistry in 15 samples of PTC and 13 samples of FTC. Differences expression between NFκB/p65 and HIF-1α were analyzed by Mann-Whitney.

**Results:** There were significant difference in the expression of HIF-1α in PTC and FTC but no significant difference in the expression of NFκB/p65. There were also significant corellation between NFκB/p65 and HIF-1α both PTC and FTC.

**Conclusion:** This study showed that NFκB/p65 had role in PTC and FTC, there is also corellation between NFκB/p65 and HIF-1α both PTC and FTC.

**Keywords:** papillary thyroid carcinoma, follicular thyroid carcinoma, NFκB/p65 and HIF-1α