

HUBUNGAN EKSPRESI CXCR4 DAN MMP-9 DENGAN STATUS METASTASIS KELENJAR GETAH BENING REGIONAL LEHER PADA PAPILLARY THYROID CARCINOMA

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ABSTRAK

Latar Belakang: Kanker tiroid adalah keganasan endokrin yang tersering, biasanya terdeteksi pada dekade ketiga hingga kelima. Salah satu faktor prognosis papillary thyroid carcinoma adalah metastasis pada kelenjar getah bening regional leher. Kemokin yang berperan dalam migrasi sel tumor adalah CXCL12 yang memiliki reseptor spesifik yaitu *CXC chemokine receptor 4* (CXCR4). Aktivasi CXCR4 akan meningkatkan pelepasan *matrix metalloproteinase-9* (MMP-9) melalui jalur MAPK/ERK. MMP-9 akan mendegradasi matriks ekstraseluler sehingga menyebabkan terjadinya migrasi dan metastasis sel tumor.

Tujuan: Penelitian ini bertujuan menganalisis adanya hubungan ekspresi CXCR4 dan MMP-9 dengan status metastatik kelenjar getah bening regional leher pada papillary thyroid carcinoma.

Metode: Penelitian yang dilakukan adalah observasional analitik dengan pendekatan *cross sectional*, pada 43 sampel papillary thyroid carcinoma di laboratorium Patologi Anatomi RSUD. Dr Soetomo periode Januari 2011–Desember 2018. Sampel dibagi dalam 2 kelompok berdasarkan status metastasis kelenjar getah bening regional leher pada papillary thyroid carcinoma. Ekspresi dinilai dengan pewarnaan imunohistokimia dengan antibodi monoklonal CXCR4 dan MMP-9. Hubungan ekspresi CXCR4 dan MMP-9 pada kedua kelompok dianalisis menggunakan uji statistik Spearman.

Hasil: Hasil penelitian menunjukkan ekspresi CXCR4 dan MMP-9 lebih tinggi pada kelompok papillary thyroid carcinoma dengan metastasis kelenjar getah bening regional leher ($p=0,007$ dan $p=0,030$). Terdapat hubungan yang signifikan antara ekspresi CXCR4 dan MMP-9 dengan status metastasis kelenjar getah bening pada papillary thyroid carcinoma.

Kesimpulan: Terdapat hubungan signifikan CXCR4 dan MMP-9 dengan metastasis kelenjar getah bening regional leher pada papillary thyroid carcinoma.

Kata kunci: Papillary thyroid carcinoma, CXCR4, MMP-9, status metastatis kelenjar getah bening.

CORRELATION CXCR4 AND MMP-9 EXPRESION WITH REGIONAL CERVICAL LYMPH NODES METASTATIC STATUS IN PAPILLARY THYROID CARCINOMA

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ABSTRACT

Backgrounds: Papillary thyroid carcinoma is the most common endocrine malignancy. It is usually detected in the third to fifth decades. The presence of cervical lymph node metastases is an important prognostic indicator in papillary thyroid carcinoma. Over-proliferating tumor cells will enhance the expression of CXCR4, a chemokine receptor. Activated CXCR4 will further activates various downstream signaling pathways, includes one which will increase MMP-9 secretion through MAPK/ERK signaling pathway. MMP-9 then will degrades extracellular matrix, facilitates the migration and metastasis of tumor cells.

Objectives: To analyze the correlation of CXCR4 and MMP-9 expresion with regional cervical lymph nodes metastatic status in papillary thyroid carcinoma.

Methods: This study is an analytical observational study with cross sectional approach, conducted on 43 samples of papillary thyroid carcinoma obtained from Anatomical Pathology Laboratory of Dr. Soetomo General Hospital, January 2011–December 2018 period. Samples were divided into two groups based on the cervical lymph node metastatic status, the metastases and without in papillary thyroid carcinoma. Stained with antibody against CXCR4 and MMP-9. The expression observed using immunohistochemical staining with CXCR4 and MMP-9 monoclonal antibody. The correlation were assessed with Spearman's rho correlation test.

Results: There is significant difference in expression of CXCR4 and MMP-9 in regional cervical lymph node metastases papillary thyroid carcinoma ($p=0,007$ and $p=0,030$). There is significant positive correlation with regional cervical lymph node metastases papillary thyroid carcinoma.

Conclusion: There is significant correlation both CXCR4 and MMP-9 with regional cervical lymph node metastases papillary thyroid carcinoma.

Keywords: papillary thyroid carcinoma, CXCR4, MMP-9, lymph node metastatic status.