INTISARI

Latar Belakang. *Tumor Associated Macrophage* (TAM) dan *Tumor Infiltrating Lymphocyte* (TIL) dilaporkan dapat mendukung dan menghambat pertumbuhan tumor, serta merupakan indikator prognostik karsinoma payudara. Lokasi TAM di lingkungan mikro tumor (stroma dan intratumor) menunjukkan prognosis yang berbeda- beda. Subtipe molekuler dan faktor klinikopatologis juga merupakan indikator prognosis karsinoma payudara. Penelitian TIL pada berbagai subtipe karsinoma payudara memperlihatkan hasil yang bervariasi. *Tumor Associated Macrophage* dapat merekrut TIL, tetapi korelasi antara keduanya pada lingkungan mikro tumor masih terbatas.

Tujuan Penelitian. Mengetahui asosiasi antara TAM dan TIL dengan subtipe molekuler dan faktor klinikopatologis, serta melihat korelasi antara TAM dengan TIL di lingkungan mikro tumor.

Metode. Dilakukan pengecatan imunohistokimia menggunakan anti CD163 (penanda TAM) dan pengecatan Hematoxylin-Eosin (HE) untuk mengamati TIL pada 75 sampel irisan jaringan *formalin-fixed paraffin-embedded* (FFPE). Interpretasi TAM menggunakan rerata jumlah sel positif di 5 lapang pandang dengan perbesaran kuat. Interpretasi TIL menggunakan persentase secara semiquantitatif dengan membandingkan densitas sel mononuclear terhadap area stroma dan intratumor. Asosiasi antara TAM dan TIL dengan subtipe molekuler dan faktor klinikopatologis diuji dengan *Chi square*. Korelasi TAM dengan TIL dianalisis dengan uji Spearman.

Hasil. *Tumor Associated macrophage* dan TIL di stroma berasosiasi dengan subtipe karsinoma payudara (pTAM= 0,028 dan pTIL= 0,02), ekspresi yang tinggi berasosiasi dengan subtipe nonluminal, ekspresi rendah berasosiasi dengan subtipe luminal. *Tumor Associated macrophage* dan TIL di intratumor tidak berasosiasi dengan subtipe (pTAM 0,58; pTIL 0,92). *Tumor Associated macrophage* dan TIL di stroma dan intratumor tidak berasosiasi dengan faktor klinikopatologis apapun. *Tumor Associated macrophage* berkorelasi positif dengan TIL di seluruh area pengamatan (p 0,028).

Kesimpulan. *Tumor Associated macrophage* dan TIL di stroma berasosiasi dengan karsinoma payudara nonluminal. *Tumor Associated macrophage* dan TIL di stroma dan intratumor tidak berasosiasi dengan faktor klinikopatologis. *Tumor Associated macrophage* berkorelasi positif lemah dengan TIL.

Kata Kunci. Karsinoma payudara, lingkungan mikro tumor, TAM, TIL

ABSTRACT

Background. Tumor Associated Macrophage (TAM) and Tumor Infiltrating Lymphocyte (TIL) regulated tumor growth and are prognostic indicators of breast carcinoma. TAM location in the tumor microenvironment (stroma and intratumor) shows different prognosis. TIL studies on breast carcinoma subtypes have shown variated results. TAM can recruit TIL, but correlation between the two in the tumor microenvironment is still limited.

Objective. To investigate if TAM and TIL are associated with molecular subtypes and clinicopathological factors. To know the correlation between TAM and TIL in the breast tumor microenvironment.

Methods. Immunohistochemical staining of CD163 as a marker of TAM and Hematoxylin-Eosin (HE) staining to observe TIL have done on 75 samples of formalin-fixed paraffin-embedded (FFPE). TAM was interpreted by counting the number of positive stained cells in five visual fields. TIL is expressed as a percentage semiquantitatively by comparing the density of mononuclear cells to the area of stroma and intratumor. The association between TAM and TIL with molecular subtypes and clinicopathological factors were analyzed by chi square test. Correlation of TAM with TIL was analyzed by Spearman test.

Results. In the stroma, TAM and TIL were associated with molecular subtype (pTAM= 0,028; pTIL= 0,02), high expression associated with nonluminal, while low expression associated with luminal. In the intratumor, TAM (p 0,58) and TIL (p 0,92) were not associated with molecular subtypes. There were no association between TAM and TIL in the stroma and intratumor with any clinicopathological factors. Tumor Associated Macrophage correlates positively with TIL on entire area observed (p 0,028).

Conclusions. Tumor Associated Macrophage and TIL in the stroma were associated with nonluminal subtipe. Tumor Associated Macrophage and TIL in the stroma and intratumor are not associated with clinicopathological factors. Tumor Associated Macrophage has a weak positive correlation with TIL on entire area observed.

Keywords: *breast carcinoma, tumor microenvironment, TAM, TIL.*