Intensitas stromal tumor infiltrating lymphocytes (sTIL) dan ekspresi programmed death ligand 1 (PD-L1) sebagai prediktor respons patologis kanker payudara terhadap terapi neoadjuvan di RSCM = Stromal tumor infiltrating lymphocytes (sTIL) intensity and programmed death ligand 1 (PD-L1) expression as pathological predictors of breast cancer response to neoadjuvant therapy in RSCM

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Abstrak

Latar Belakang: Respons patologis kanker payudara terhadap terapi neoadjuvan masih relatif rendah, khususnya di RSCM. Intensitas sTIL dan ekspresi PD-L1 telah diteliti sebagai prediktor respons terapi neoadjuvan. Penelitian ini menilai peran intensitas sTIL dan ekspresi PD-L1 terhadap repons terapi neoadjuvan kanker payudara. Data tersebut dapat dimanfaatkan sebagai data awal di Indonesia, untuk perencanaan terapi pasien kanker payudara yang lebih baik, terlebih dengan sudah tersedianya imunoterapi anti-PD-1/PD-L1.
Tujuan: Mengetahui intensitas sTIL dan ekspresi PD-L1 sebagai prediktor respons patologis kanker payudara terhadap terapi neoadjuvan di RSCM.
Metode: Penelitian berdesain kohort retrospektif, analitik observasional, pada kasus kanker payudara yang mendapatkan terapi neoadjuvan dan mastektomi di RSCM periode Januari 2014-Desember 2021. Dilakukan total sampling sebanyak 60 kasus. Ekspresi PD-L1 (imunohistokimia, klon 22C3) dan intensitas sTIL (histopatologi) diperiksa pada spesimen biopsi. Dilakukan analisis multivariat regresi linear untuk mendapatkan prediktor independen respons terapi neoadjuvan.
Hasil: Didapatkan 60 pasien perempuan, median usia 46 tahun, 91,7% karsinoma invasif no special type. Median intensitas sTIL 10% (1%-70%). Intensitas sTIL rendah (10%) pada 58,3% sampel. Ekspresi PD-L1 positif (CPS 1) pada 28,3% sampel. Hanya 8,3% sampel mencapai pCR, 90% tergolong RCB kelas II-III. Didapatkan prediktor independen skor RCB: Setiap peningkatan 1% intensitas sTIL, tidak adanya invasi limfovaskular, dan pemberian kemoterapi berbasis taksan diprediksi menurunkan skor RCB sebanyak 0,058 (0,039-0,078), 0,781 (0,241-1,321), dan 0,594 (0,037-1,152). Ekspresi PD-L1 yang positif berhubungan dengan tercapainya pCR-RCB kelas I (p=0,048), tetapi skor CPS bukan merupakan prediktor skor RCB pada analisis multivariat regresi linear.
Kesimpulan: Intensitas sTIL merupakan prediktor respons patologis kanker payudara terhadap terapi neoadjuvan di RSCM. Ekspresi PD-L1 berhubungan dengan tercapainya pCR-RCB kelas I, tetapi skor CPS bukan prediktor skor RCB.
Kata kunci: PD-L1, programmed-death ligand 1, sTIL, stromal tumour infiltrating lymphocyte, kanker payudara, kemoterapi neoadjuvan, respons patologis
.....Background: Pathological responses to neoadjuvant therapy were still relatively poor, especially in RSCM. Studies had been done to search for predictors of response such as sTIL intensity and PD-L1 expression, which is known to block sTIL action in killing cancer cells. This research assessed sTIL intensity and PD-L1 expression as predictors of response to neoadjuvant therapy in breast cancer. The preliminary data might be used to better tailored breast cancer patient therapy, considering the availability of

anti-PD-1/PD-L1 immunotherapy nowadays.
Objective: To assess TIL intensity, PD-L1 expressions, and their roles as pathological predictors of breast cancer reponse to neoadjuvant therapy in RSCM.
Method: This was an observational analytic retrospective cohort study on breast cancer patients receiving neoadjuvant therapy and mastectomy in RSCM from January 2014 to December 2021. Total sampling was done. PD-L1 expression (immunohistochemistry, clone 22C3) and sTIL intensity (histopathology) was examined in the biopsy specimen. Linear regression analysis was done to determine the independent predictors of neoadjuvant therapy response (evaluated in the mastectomy specimen with residual cancer burden/RCB score).
Results: There were 60 female patients, median age 46 years old. 91,7% had invasive carcinoma of no special type. Median sTIL intensity was 10% (1%-70%). 58,3% patients had low sTIL intensity (10%). 28,3% patients had positive PD-L1 expression (CPS 1). Only 8,3% patients had pCR, while 90% patients had RCB class II-III. Every 1% increase in sTIL intensity, no lymphovascular invasion, and taxane chemotherapy were predicted to lower RCB score by 0,058, 0,781, dan 0,594, respectively. PD-L1 expression associated with pCR-RCB class I (p=0,048), but CPS score was not a predictor of RCB score in linear regression analysis.
Conslusion: sTIL intensity was an independent predictor of breast cancer response to neoadjuvant therapy in RSCM. PD-L1 expression associated with pCR-RCB class I, but CPS score was not a predictor of RCB score.
Keywords: PD-L1, programmed death ligand 1, sTIL, stromal tumour infltrating lymphocyte, breast cancer, neoadjuvant therapy, pathological response