

INTISARI

Latar belakang: Kanker ovarium merupakan penyebab mortalitas tertinggi di antara keganasan ginekologis. Dalam mengembangkan terapi dan diagnosis, diperlukan pemahaman lebih mendalam tentang lingkungan mikroskopis tumor ovarium. Berbagai studi mengindikasikan bahwa sel-sel jaringan stroma berperan penting dalam perkembangan tumor, terutama *cancer-associated fibroblasts* (CAF). Penanda CAF utama yang digunakan adalah *alpha-smooth muscle actin* (α -SMA). Sejauh ini, mekanisme hubungan antara CAF dan proliferasi sel belum jelas.

Tujuan: Mengkaji ekspresi α -SMA dan jumlah proliferasi sel pada tumor ovarium epitelial jinak dan ganas dan mengkaji korelasi ekspresi α -SMA dan jumlah proliferasi sel pada stroma tumor ovarium epitelial jinak dan ganas.

Metode: Subjek penelitian adalah hasil ooforektomi semua penderita tumor ovarium dari RSUP Dr. Sardjito pada bulan Januari-Juli 2014, sejumlah 12 tumor jinak dan 18 tumor ganas. Tiap sampel dibuat menjadi 2 preparat, preparat IHC α -SMA dan IHC Ki-67. Dari setiap preparat, diambil 10 foto stroma dengan perbesaran 400x. Tingkat ekspresi α -SMA diukur dari persentase luas area stroma yang positif pada untuk α -SMA, sedangkan jumlah proliferasi sel stroma diukur dari fraksi jumlah sel stroma yang positif untuk Ki-67.

Hasil: Rata-rata fraksi area stroma positif IHC α -SMA adalah 46,83% pada tumor jinak dan 35,32% pada tumor ganas, maka ekspresi α -SMA lebih tinggi pada tumor jinak daripada ganas ($p = 0,001$). Rata-rata persentase sel stroma positif IHC Ki-67 adalah 6,42% pada tumor jinak dan 31,03% pada tumor ganas, maka jumlah proliferasi lebih tinggi pada tumor ganas daripada jinak ($p = 0,000$). Hasil uji korelasi antara ekspresi α -SMA dan proliferasi sel memberikan hasil koefisien korelasi -0,355, namun tidak signifikan secara statistik ($p = 0,054$).

Kesimpulan: Ekspresi α -SMA lebih tinggi secara signifikan pada stroma tumor ovarium epitelial jinak daripada ganas, sedangkan jumlah proliferasi lebih tinggi pada stroma tumor jinak daripada ganas. Hasil menunjukkan korelasi negatif antara α -SMA dan jumlah proliferasi sel, tetapi tidak signifikan secara statistik.

Kata kunci: α -SMA, *cancer-associated fibroblasts*, proliferasi, stroma, tumor ovarium

ABSTRACT

Background: Ovarian cancer has the highest mortality rate among gynecologic malignancies. Further developments in diagnosis and therapy will need extensive knowledge on the microscopic environment of the tumors. Studies have shown that stromal cells play an important role in tumor development, especially *cancer-associated fibroblasts* (CAF). The main marker used for CAF is alpha-smooth muscle actin (α -SMA). So far, the exact correlation between α -SMA expression and cell proliferation in stromal cells of ovarian tumors has yet to be elucidated.

Aim: To investigate the α -SMA expression and cell proliferation of stromal cells of benign and malignant epithelial ovarian tumors and to evaluate whether there is a correlation between α -SMA expression and cell proliferation in stromal cells of benign and malignant epithelial ovarian tumors.

Method: The subjects were samples from oophorectomy results of ovarian tumor patients from RSUP Dr. Sardjito in January-July 2014, including 12 benign tumors and 18 malignant tumors. Each subject was processed into 2 slides, one stained with IHC α -SMA and the other with IHC Ki-67. From each slide, 10 photos of the stroma in 400x magnification were taken. α -SMA expression was measured from the percentage of the area positively stained for α -SMA, while cell proliferation was measured from the fraction of cells positively stained for Ki-67.

Results: The average fraction stromal area positively stained by IHC α -SMA was 46,83% in benign tumors and 35,32% in malignant tumors, so α -SMA expression was found to be higher in benign tumors ($p = 0,001$). The average percentage of stromal cells positively stained by IHC Ki-67 was 6,42% in benign tumors and 31,03% in malignant tumors, so cell proliferation was found to be higher in malignant tumors ($p = 0,000$). Correlation test between α -SMA expression and cell proliferation gave a correlation coefficient of -0,355, but this result is statistically insignificant ($p = 0,054$).

Conclusion: α -SMA expression was higher in benign tumors compared to malignant tumors, while cell proliferation was higher in malignant tumors compared to benign tumors. A negative correlation was found between α -SMA expression and cell proliferation in benign and malignant epithelial ovarian tumors, but the correlation was statistically insignificant.

Keywords: α -SMA, *cancer-associated fibroblasts*, proliferation, stroma, ovarian tumor