

HUBUNGAN ANTARA EKSPRESI *HEAT SHOCK PROTEIN -70* (HSP70) DENGAN SKOR *RISK OF OVARIAN CANCER RELAPSE (ROVAR)* PADA PASIEN KANKER OVARIUM EPITELIAL YANG DILAKUKAN OPERASI DAN DILANJUTKAN DENGAN KEMOTERAPI

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INTISARI

LATAR BELAKANG: Kanker ovarium merupakan salah satu penyebab utama kematian pada keganasan organ ginekologi yang menempati tempat ketiga di dunia. Salah satu tantangan terbesar dalam manajemen kanker ovarium adalah resistensi terhadap kemoterapi. Peningkatan *Heat Shock Protein-70* (HSP70) dikaitkan dengan progresifitas pembentukan sel tumor melalui proses resistensi terhadap kemoterapi, sedangkan skor *Risk Of Ovarian Cancer Relapse (ROVAR)* merupakan pengukur yang dapat digunakan dalam memprediksi risiko kekambuhan suatu kanker ovarium pada pasien yang telah dilakukan operasi dan kemoterapi.

TUJUAN: Menilai hubungan antara ekspresi protein HSP70 dengan Skor ROVAR pada pasien kanker ovarium epitelial yang dilakukan operasi dan dilanjutkan dengan kemoterapi.

METODE: Penelitian ini menggunakan metode kohort retrospektif yang melibatkan 42 pasien kanker ovarium epitelial yang dilakukan operasi (optimal atau suboptimal) dan dilanjutkan kemoterapi. Dilakukan pengecatan imunohistokimia blok parafin prekemoterapi dengan menggunakan antibodi HSP70 dan perhitungan risiko rekurensi dengan menggunakan skor ROVAR post operasi dan kemoterapi. Variabel luar yang dievaluasi adalah usia, paritas, Indeks Massa Tubuh (IMT), riwayat menopause, dan jenis operasi. Analisis data menggunakan uji *Chi Square*, uji korelasi spearman, dan analisis regresi logistik.

HASIL: Dari 42 subyek penelitian diperoleh rerata usia pasien 54,3 tahun, terbanyak ditemukan pada stadium lanjut. Pada pengukuran skor ROVAR, risiko tinggi sebanyak 32(76,19%), risiko sedang dan rendah sebanyak 10(23,81%). Ekspresi HSP70 kuat ditemukan sebanyak 36(85,71%), ekspresi HSP70 sedang sebanyak 6(14,39%), dan ekspresi HSP70 lemah tidak ditemukan. Berdasarkan uji korelatif Spearman, terdapat korelasi positif, sangat kuat, dan bermakna pada ekspresi HSP70 dan alokasi risiko menurut skor ROVAR ($r=0,717$, $p=0,000$). Pada analisis multivariat, ekspresi HSP70 memiliki hubungan bermakna secara statistika dan klinis dengan skor ROVAR ($p=0,017$; RR 2,710; CI 95% 0,366-5,054), yaitu ekspresi HSP70 yang kuat lebih mungkin 2,71 kali memiliki risiko tinggi kekambuhan menurut skor ROVAR.

KESIMPULAN: Terdapat korelasi positif, sangat kuat, dan bermakna pada ekspresi HSP70 dan alokasi risiko menurut skor ROVAR. Dalam penelitian ini ekspresi HSP70 dan skor ROVAR dapat digunakan untuk memprediksi risiko rekurensi pada pasien kanker ovarium yang dilakukan operasi dan dilanjutkan dengan kemoterapi.

KATA KUNCI: Kanker ovarium epitelial, HSP70, *ROVAR score*, rekurensi

ABSTRACT

Background: Ovarian cancer is one of the leading causes of death in gynecological malignancies which occupies the third place in the world. One of largest challenge in epithelial ovarian cancer therapy is resistance to chemotherapy. Increased of Heat Shock Protein-70 (HSP70) expression associated with the progressivity of tumor cells growth through the resistance process against chemotherapy, whereas Risk Of Ovarian Cancer Relapse (ROVAR) score is a tool that used to predict the ovarian cancer recurrence risk in patient who underwent surgery followed by chemotherapy.

Objective: This study is aimed to evaluate the correlation between HSP70 expression and ROVAR score in patient with epithelial ovarian cancer who underwent first line therapy.

Method: This is a retrospective cohort study that involve 42 subjects with epithelial ovarian cancer who had been through surgery (optimal or suboptimal surgery) followed by chemotherapy. Immunohistochemical staining of pre chemotherapy paraffin blocks was performed using HSP70 antibody and recurrence risk was calculated using ROVAR scores after surgery followed by chemotherapy. The external variables evaluated were age, parity, Body Mass Index (BMI), menopause history, and surgical type. Data analysis used Chi Square test, spearman test, and logistic regression analysis.

Result: Of the total 42 subjects who met the inclusion criteria, most found in advanced stage with the age mean is 54,3 years old. In the ROVAR score measurement, in high risk category is found about 32(76.19%), while in the medium risk and low risk category is 10 (23.81%). On the other hand, strong HSP70 expression was found in 36(85,71%), moderate HSP70 expression in 6(14,39%), and weak HSP70 expression was not found. Based on Spearman's correlative test, there was a positive, very strong, and significant correlation between the expression of HSP70 and risk allocation according to ROVAR score ($r=0.717$, $p=0.000$). As well as in multivariate analysis, HSP70 expression had a statistically and clinically significant relationship with ROVAR score ($p=0.017$; RR 2.710; 95% CI 0.366-5.054) which strong HSP70 expression was 2.71 times more likely to have a high risk of recurrence according to ROVAR score.

Conclusion: There is a positive, very strong, and significantly meaning between HSP70 expression and ROVAR score. Increased in HSP70 expression may lead to increased recurrence risk according to ROVAR score. Both could be used to predict recurrence in epithelial ovarian cancer post first line therapy.

Keywords: Epithelial ovarian cancer, HSP70, ROVAR score, recurrence.