

ABSTRAK

Latar Belakang: Hydrosalpinx merupakan akumulasi cairan pada lumen tuba falopi. Hydrosalpinx umumnya disertai dengan adhesi pada jaringan disekitar tuba falopi. Adhesi adalah jaringan fibrosa yang terbentuk akibat adanya inflamasi sehingga menyebabkan perlengketan dengan jaringan atau organ di sekitarnya. Adhesi jaringan pada organ reproduksi wanita dapat diantaranya disebabkan oleh proses pembedahan/surgery, infeksi, radiasi atau akibat proses inflamasi kronis lainnya seperti misalnya endometriosis. Adhesi jaringan pada organ reproduksi wanita dapat menyebabkan gangguan pada kesehatan reproduksi yaitu infertilitas, seperti misalnya adhesi pada cavum uteri atau adhesi pada saluran tuba dan jaringan di sekitarnya. Adhesi jaringan dapat terbentuk akibat gangguan keseimbangan yang melibatkan proses inflamasi, angiogenesis, sistem fibrinolisis, sistem koagulasi dan matrix metalloproteinase dalam regenerasi dan remodeling jaringan yang rusak. Pada kondisi hydrosalpinx yang disebabkan oleh infeksi chlamydia trachomatis, terdapat peran dari cHSP60 akan menimbulkan stimulasi persisten terhadap sistem imun sehingga menyebabkan terjadinya inflamasi kronis. Selain itu, juga terdapat peran dari MMP-9 dan TIMP-1 yang menjaga keseimbangan regenerasi dan remodeling matriks ekstraselular suatu jaringan. Sehingga penelitian ini dilakukan untuk mengetahui bagaimana hubungan ketiga mediator tersebut terhadap derajat adhesi dan persentase terbentuknya fibrosis pada jaringan hydrosalpinx.

Tujuan: untuk mengetahui hubungan ekspresi mRNA Ct604 yang memproduksi cHSP60, mRNA MMP-9 yang memproduksi MMP-9 dan mRNA TIMP-1 yang memproduksi TIMP-1 terhadap derajat adhesi dan luas jaringan fibrosis pada hydrosalpinx.

Metode Penelitian: menggunakan studi cross sectional analitik terhadap sampel jaringan hydrosalpinx di RSUP Dr Sardjito Yogyakarta yang memenuhi kriteria inklusi penelitian. Kemudian sampel tersebut akan diperiksa derajat adhesi, persentase luas jaringan fibrosis, ekspresi mRNA Ct604, mRNA MMP-9 dan mRNA TIMP-1 melalui pemeriksaan pengecatan picro-sirius red, pengecatan hematoxyline dan RT-PCR. Data yang didapat akan dikumpulkan kemudian dianalisa menggunakan uji chi-square dan uji pearson correlation.

Hasil Penelitian: Total didapatkan 60 sampel penelitian di RSUP Dr Sardjito, Yogyakarta. Dari hasil uji chi-square didapatkan berturut-turut ekspresi mRNA Ct604 yang lebih tinggi, ekspresi mRNA MMP-9 yang lebih rendah dan ekspresi mRNA TIMP-1 yang lebih tinggi berisiko 5,128 kali, 5,260 kali, dan 6,900 kali memperberat adhesi derajat 3 dan 3,538 kali, 3,788 kali, dan 4,200 kali memperburuk luas jaringan fibrosis >50%. Dari hasil uji pearson correlation didapatkan ekspresi mRNA Ct604 yang lebih tinggi memiliki korelasi kuat terhadap ekspresi MMP-9 yang lebih rendah dan korelasi sempurna terhadap ekspresi TIMP-1 yang lebih tinggi.

Kesimpulan: ekspresi mRNA Ct604 yang lebih tinggi, ekspresi mRNA MMP-9 yang lebih rendah dan ekspresi mRNA TIMP-1 yang lebih tinggi memperburuk derajat adhesi dan luas jaringan fibrosis pada jaringan hydrosalpinx

Kata Kunci: ekspresi mRNA Ct604, ekspresi mRNA MMP-9, ekspresi mRNA TIMP-1, hydrosalpinx

ABSTRACT

Introduction: Hydrosalpinx is the accumulation of fluid in the lumen of the fallopian tube. Hydrosalpinx fluid is toxic, cause damage to the embryo and affect receptiveness to the endometrium. Hydrosalpinx is generally accompanied by adhesion to the tissue around the fallopian tube. Adhesion are fibrous tissues that is formed due to inflammation that causes attachment with surrounding tissues or organs. Adhesion in the female reproductive organs caused by surgery, infection, radiation or due to other chronic inflammatory processes such as endometriosis. It can cause infertility in reproductive health, because adhesion to the uterine cavum or adhesions to the fallopian tubes and surrounding tissues. Adhesion formed as a result of imbalance between inflammatory processes, angiogenesis, fibrinolysis system, coagulation system and matrix metalloproteinase in regeneration and remodeling of damaged tissues. Hydrosalpinx caused by chlamydia trachomatis infection produce cHSP60 that induce persistent stimulation of the immune system and then continue to chronic inflammation. In addition, MMP-9 and TIMP-1 has a role to maintain the balance of regeneration and remodeling in tissue extracellular matrix. We conduct this study to find out the relationship between cHSP60, MMP-9 and TIMP-1 to the degree of adhesion and the percentage of fibrosis formed in hydrosalpinx.

Objective: To find out the relation between expression of mRNA Ct604 which produces cHSP60, mRNA MMP-9 which produces MMP-9 and mRNA TIMP-1 which produces TIMP-1 as a factor that affects the degree of adhesion in hydrosalpinx.

Method: Used an analytic cross-sectional study from hydrosalpinx tissue samples at Dr. Sardjito General Hospital, Yogyakarta, which met the inclusion criteria of the studies. Then the sample was examined for the degree of adhesion, the extension of fibrous tissue, and the expression of CT604 mRNA, MMP-9 mRNA, and TIMP-1 mRNA by using picro-sirius red staining, hematoxyline staining, and RT-PCR. The obtained data were collected and then analyzed using the chi-square test and the Pearson correlation test.

Result: In total, 60 samples were obtained from Dr. Sardjito General Hospital, Yogyakarta. Based on the chi-square test, it was found that increased Ct604 mRNA expression, decreased MMP-9 mRNA expression, and increased TIMP-1 mRNA expression were at increased risk of 5.128 times, 5.260 times, and 6.900 times exacerbated third degree adhesion, and 3.538 times, 3.788 times, and 4,200 times exacerbated fibrous tissue area >50%. From the results of the Pearson correlation test, it was found that higher Ct604 mRNA expression had a strong correlation with lower MMP-9 expression and a perfect correlation with higher TIMP-1 expression.

Conclusion: Higher CT604 mRNA expression, lower MMP-9 mRNA expression, and higher TIMP-1 mRNA expression exacerbate the degree of adhesion and extent of fibrous tissue in hydrosalpinx tissue.

Keyword: mRNA Ct604 expression, mRNA VEGF-A expression, mRNA MMP-9 expression, hydrosalpinx