

INTISARI

Perbedaan Ekspresi miR-200c Pada Plasma Orang Sehat, Pasien Tumor Ovarium Dan Pasien Kanker Ovarium

LatarBelakang : Kanker ovarium merupakan keganasan ginekologis yang paling mematikan pada wanita. Sebagian besar kanker ovarium terdiagnosis pada stadium lanjut akibat gejala yang tidak khas dan belum adanya metode deteksi dini yang efektif. Diperlukan adanya biomarker deteksi dini yang minimal *invasive* untuk meningkatkan keberhasilan pengobatan. *microRNA* merupakan regulator ekspresi gen pada tingkatan *posttranskripsi* dan memainkan peranan penting dalam karsinogenesis kanker ovarium. *microRNA* juga dapat dideteksi di sirkulasi darah sehingga berpotensi sebagai biomarker minimal *invasive* untuk kanker ovarium. **Tujuan :** Penelitian ini bertujuan untuk mengukur dan membandingkan ekspresi miR-200c pada plasma penderita tumor ovarium dan kanker ovarium epitel stadium awal dan stadium lanjut.

Desain : Penelitian ini merupakan penelitian analitik observasional dengan desain *cross sectional*. Penelitian ini menggunakan 30 plasma pasien kanker ovarium epitel 30 plasma pasien tumor ovarium jinak, dan 30 subjek sehat. Ekspresi relatif miR-200c dikuantifikasi menggunakan *reverse transcription Real Time Quantitative PCR* (qRT PCR). Metode $2^{-\Delta\Delta Cq}$ digunakan untuk menghitung kuantifikasi relatif miR-200c.

Hasil : Ekspresi miR-200c pada plasma darah pasien kanker ovarium epitel mengalami penurunan sebesar 3,23 kali lipat dibanding plasma darah pasien tumor ovarium ($p=0,001$), dan mengalami penurunan sebesar 5,56 kali lipat dibanding plasma darah subjek sehat ($p=0,001$). Sedangkan pada plasma darah pasien tumor ovarium epitel mengalami penurunan sebesar 1,72 kali lipat dibanding plasma darah pasien tumor ovarium ($p=0,001$). Ekspresi miR-200c pada stadium lanjut mengalami penurunan signifikan sebesar 3,63 kali lipat ($p=0,001$)

Kesimpulan : Ekspresi miR-200c pada plasma darah pasien kanker ovarium lebih rendah daripada ekspresi miR-200c pada orang sehat, dan pasien tumor ovarium dan ekspresi miR-200c pada plasma darah pasien kanker ovarium stadium lanjut lebih rendah daripada ekspresi miR-200c pada plasma darah pasien kanker ovarium stadium awal.

Kata Kunci : Kanker Ovarium Epitel, *microRNA*, miR-200c

ABSTRACT

Differential Expression miR-200c In Blood Plasma Between Epithelial Ovarian Cancer, Benign Ovarian Tumors, And Healthy Subject

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Background : Epithelial Ovarian Cancer (EOC) is the second most common gynecological cancer. Unfortunately, almost 70 percent of women with the common epithelial ovarian cancer are not diagnosed until the disease is advanced in stage. Therefore, an adequate biomarker for early detection is needed and may improve patient survival. microRNA is a small non-coding RNA that regulates gene expression in post-transcriptional level. Several studies have shown the ability to detect microRNA in blood circulation so microRNA may be used as a minimally invasive biomarker for EOC. microRNA-200c (miR-200c) plays a major role in EOC by regulating expression of several onco gene. When various studies found that miR-200c expression is significantly downregulated in EOC tissue, little is known about the expression of miR-200c in blood circulation of EOC patient, especially in Yogyakarta population.

Objective : The aims of this study is to measure and compare expression of miR-200c in blood plasma of ovarian tumor patient and epithelial ovarian cancer patient advanced and early stage and healthy subject.

Methods : This study used cross-sectional design. 30 blood plasma of ovarian tumor and 30 blood plasma of EOC were collected with one 15 blood plasma of EOC early stage, 15 blood plasma advanced stage, also 30 blood plasma healthy subject. Total RNA was isolated and reverse transcribed to obtain cDNA. The expression of miR-200c were measured by quantitative real-time polymerase chain reaction assay (qPCR). The $2^{-\Delta\Delta Cq}$ method was used to calculate relative quantification of miR-200c using miR-16 as reference gene for microRNA.

Result : Expression of miR-200c is significantly downregulated in blood plasma of epithelial ovarian cancer patient compared to the ovarian tumor ($p=0,001$, fold change=3,23), and compared too to the healthy subjects ($p=0,001$, fold change=5,56), and expression of miR-200c between EOC patient early stage significantly downregulated ($p=0,001$, fold change=3,63)

Conclusion : miR-200c differentially expressed in blood plasma of ovarian tumor, healthy subjects and epithelial ovarian cancer patient early between advanced stage.

Keywords : Epithelial ovarian cancer, Circulating microRNA, miR-200c.