

INTISARI

EKSPRESI EKSOSOMAL URINE MRNA NCOA1 DAN MRNA MMP-9 TERKAIT METASTASIS KARSINOMA PROSTAT

Nimas P.R.K. Wardhani¹, Indwiani Astuti², Nungki Anggorowati³

¹Magister Ilmu Biomedik, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan, Universitas Gadjah Mada

²Departemen Farmakologi, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan, Universitas Gadjah Mada

³Departemen Patologi Anatomi, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan, Universitas Gadjah Mada

Latar Belakang: NCOA1 dan MMP-9 memiliki peran dalam progresivitas dari karsinoma prostat. NCOA1 sebagai koaktivator yang berperan dalam membantu meningkatkan ekspresi gen biasaya memiliki konsentrasi rendah di sel normal. Adanya peningkatan aktivitas dari NCOA1 akan mengakibatkan peningkatan ekspresi gen target, salah satunya MMP-9. MMP-9 berperan dalam membantu invasi dan metastasis sel kanker.

Tujuan: Penelitian ini bertujuan untuk mengkaji ekspresi mRNA NCOA1 dan MMP-9 dalam eksosom urine terhadap status metastasis pasien karsinoma prostat

Metode: Sampel berupa urine pasien karsinoma prostat Rumah Sakit Sardjito. Data berupa metastasis, *Gleason score*, kadar PSA, dan volume prostat diperoleh dari rekam medis. RT-PCR dan *ImageJ* digunakan untuk menganalisis ekspresi NCOA1 dan MMP-9. Perbedaan dianalisis menggunakan *independent sample t test* dan *One way ANOVA*.

Hasil: Sebanyak 20 sampel dianalisis, 18 sampel memiliki data metastasis, 17 sampel memiliki data *Gleason score* dan kadar PSA, serta 12 sampel memiliki data volume prostat. Hasil analisis didapatkan tidak ada perbedaan ekspresi NCOA1 dan MMP-9 terhadap metastasis, *Gleason score*, dan kadar PSA, namun kadar MMP-9 didapatkan lebih tinggi pada volume prostat yang mengalami peningkatan.

Kesimpulan: Tidak terdapat perbedaan ekspresi NCOA1 dan MMP-9 terkait metastasis karsinoma prostat

Kata kunci: NCOA1, MMP-9, eksosom, metastasis

ABSTRACT

URINE EXOSOMAL EXPRESSION OF NCOA1 DAN MMP-9 IN PROSTATE CANCER METASTASIS

Nimas P.R.K. Wardhani¹, Indwiani Astuti², Nungki Anggorowati³

¹Postgraduate Program of Biomedical Science, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

²Department of Pharmacology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

³Department of Pathology Anatomy, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

Background: NCOA1 and MMP-9 play a role in the progression of prostate carcinoma. NCOA1 as a co-activator is a strong driver of gene expression that is usually unstable and has a low concentration in normal cells. This causes an increase in the concentration and activity of NCOA1 which significantly affects the expression of its target genes, one of which is MMP-9. MMP-9 mainly plays a role in assisting cancer cell invasion and tumor metastasis.

Objective: This research aims to elucidate the expression of NCOA1 and MMP-9 in exosome of urine in prostate cancer metastasis.

Methods: The samples were urine of prostate carcinoma patient that diagnosed in Dr. Sardjito Hospital. Data of metastasis, Gleason score, PSA, and prostate volume were obtained from medical records. Reverse transcriptase-PCR (RT-PCR) and were used to quantify and analyze NCOA1 and MMP-9 expressions. The differences were analyzed with an independent sample t-test and one-way ANOVA.

Results: Twenty samples were analyzed, 18 samples had metastasis status, 17 samples had Gleason score, 17 samples had PSA level, and 12 samples had prostate volume data. There were no differences in the expressions of NCOA1 and MMP-9 in metastasis, Gleason score, and PSA level, but there was a difference in the expression of MMP-9 in prostate volume.

Conclusion: There is no difference between the expression of NCOA1 and MMP-9 in prostate cancer metastasis.

Key word: NCOA1, MMP-9, exosome, metastasis