

PERBEDAAN EKSPRESI *HSA-MIR-155-5P* DAN *mRNA SUPPRESSOR OF CYTOKINE SIGNALING 1 (SOCS1)* PLASMA PASIEN KARSINOMA NASOFARING STADIUM AWAL DENGAN STADIUM LANJUT

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INTISARI

Latar belakang: Karsinoma merupakan penyakit mematikan dengan insidensi dan mortalitas yang tinggi. Karsinoma nasofaring merupakan karsinoma kepala dan leher yang memiliki prevalensi tinggi terutama di wilayah Asia. Terapi yang tepat membutuhkan suatu pemahaman regulasi patogenesis karsinoma hingga tingkat molekuler. Beberapa penelitian sebelumnya telah membuktikan adanya peningkatan ekspresi hsa-miR-155-5p pada berbagai karsinoma. Peningkatan ekspresi hsa-miR-155-5p juga terbukti pada jaringan karsinoma nasofaring. Namun belum adanya penjelasan akan ekspresi hsa-miR-155-5p pada plasma karsinoma nasofaring stadium awal dan stadium akhir. Pada penelitian insiliko yang telah dilakukan, diketahui hsa-miR-155-5p menargetkan mRNA SOCS1 yang merupakan *suppressor* signal transduksi aktivasi transkripsi gen.

Tujuan : Peneliti ingin menganalisa ekspresi hsa-miR-155-5p dan mRNA SOCS1 pada plasma penderita karsinoma nasofaring stadium awal dan stadium lanjut.

Metode: Hsa-miR-155-5p dan mRNA SOCS1 diisolasi dari sampel plasma darah dengan menggunakan *miRCURY RNA Isolation Kit-Biofluid*. Hs-miR-155-5p disintesis cDNA dengan kit *Universal cDNA Synthesis kit II, 8-64 rxns* dan mesin *thermal cycler PCR* (Biorad c1000) dan qRT-PCR dengan Mesin *Real-time qPCR* (Biorad CFX 96). Sedangkan untuk mRNA SOCS1 dilakukan *One-Step qRT-PCR* dengan kit *KAPA™ SYBR®*.

Hasil Penelitian: Hasil qRT-PCR yang dianalisis dengan *Biorad CFX Manager™ Software* menunjukkan bahwa ekspresi hsa-miR-155-5p lebih tinggi 1,13 kali ($p \text{ value}=0,713^*$) pada plasma stadium lanjut kanker nasofaring dibandingkan dengan stadium awal, sedangkan ekspresi mRNA SOCS1 lebih rendah 1,1 kali ($p \text{ value}=0,891^*$) pada plasma stadium lanjut kanker nasofaring dibandingkan dengan stadium awal. Namun perbedaan tersebut tidak signifikan secara statistik ($p \text{ value} \geq 0,05^*$).

Kesimpulan: Penelitian ini telah berhasil membuktikan bahwa hsa-miR-155-5p mengalami overekspresi pada stadium lanjut karsinoma nasofaring yang diiringi oleh downregulasi ekspresi mRNA SOCS1 dibandingkan pada stadium awal. Dereglulasi hsa-miR-155-5p dan mRNA SOCS1 diyakini terlibat dalam proses progresifitas karsinoma nasofaring.

Kata kunci : Plasma, stadium karsinoma nasofaring, hsa-miR-155-5p, mRNA SOCS1

DIFFERENTIAL EXPRESSION OF HSA-MIR-155-5P AND mRNA SUPPRESSOR OF CYTOKINE SIGNALING 1 (SOCS1) ON PLASMA AT EARLY STAGE AND LATE STAGE OF NASOPHARYNGEAL CARCINOMA

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ABSTRACT

Background: Carcinoma is one of the lethal disease with high rate of incidents and mortality. Nasopharyngeal carcinoma as head and neck tumor, have high prevalence in Asia with high recurrence level. Thus, accurate therapy within carcinoma pathogenesis regulation on molecularr level are urgently needed. Researches had evinced significant overexpressions on hsa-miR-155-5p for different carcinomas, either in nasofaring carcinoma. Even though, more explanations are needed in inquisition of early and late stage of proliferation. In previous insilico research, hsa-miR-155-5p are known to target mRNA SOCS1, as transduction signal suppressor for gen transcription activator.

Objective: This research try to analyze difference expressions of hsa-miR-155-5p and mRNA SOCS1 on plasma patient at early and late stage of nasofaring carcinoma.

Methods: Hsa-miR-155-5p and mRNA SOCS1 were isolated from blood sample plasma using miRCURY RNA Isolation Kit-Biofluid. cDNA synthesised using cDNA Synthesis kit II, 8-64 rxns running by PCR thermal cycler (Biorad c1000) and Real-time qPCR (Biorad CFX 96) for Hsa-miR-155-5p. mRNA SOCS1 was analyzed by One-Step qRT-PCR using KAPA™ SYBR® kit.

Result: Biorad CFX Manager™ Software are used to analyzed qRT-PCR result, and showed hsa-miR-155-5p expressions fold change was upregulated 1,13 (p value=0,713*) on late stage compared with early stage. For mRNA SOCS1, it was downregulated 1,1-fold (p value=0,891*) on late stage compared with early stage. Nevertheless, the difference are not statistically significant (p value > 0,05*).

Conclusions: This research invince that hsa-mir-155-5p were overexpressed on late stage nasofaring carcinoma, aligned with mRNA SOCS1 downregulated expression, compared with early stage. Therefore, Deregulation of -miR-155-5p dan mRNA SOCS1 are believed to have significant role on nasofaring carcinoma progressivity.

Keyword: plasma, nasopharyngeal carcinoma stages, hsa-miR-155-5p, mRNA SOCS1