

ABSTRAK

PENGEMBANGAN DIAGNOSIS KANKER PARU JENIS *NON SMALL CELL LUNG CANCER* MENGUNAKAN EKSPRESI MELANOMA ASSOCIATED ANTIGEN A1, A3, A1 DAN A3 SERTA A1-A6

Latar Belakang

Melanoma-associated antigen (MAGE) adalah salah satu tumor antigen yang diketahui berperan pada proses onkogenesis dan penghambatan apoptosis. Sebagai pengembangan diagnosis kanker paru, MAGE perlu diteliti lebih lanjut bila dibandingkan dengan pemeriksaan konvensional sitologi dan histopatologi.

Metode

Penelitian ini adalah penelitian observasional analitik yang dilakukan di RSUD Dr. Soetomo Surabaya pada Februari 2017-September 2019. Sampel penelitian adalah spesimen biopsi penderita kanker paru meliputi 31 *core biopsy*, 37 BAL, dan 33 *forceps biopsy*.

Hasil

Hasil histopatologi menunjukkan mayoritas adenocarcinoma (31.6%). MAGE apabila dibandingkan dengan hasil histopatologi didapatkan tidak terdapat perbedaan bermakna hasil MAGE A1, MAGE A3, MAGE A1 dan A3 serta MAGE A1-A6 pada jaringan sentral ($p > 0,05$). Hasil Uji Kappa pada jaringan sentral menunjukkan terdapat kesesuaian yang bermakna antara gen MAGE A1 (rendah), gen MAGE A3 (cukup), gen MAGE A1 dan A3 (rendah) dan MAGE A1-6 (cukup), serta pada data jaringan sentral tidak terdapat perbedaan bermakna dengan hasil histopatologi dengan hasil Uji Kappa menunjukkan terdapat kesesuaian yang bermakna ($p < 0,05$), dengan tingkat kesesuaian cukup. Sensitivitas dan spesifitas tertinggi didapat pada ekspresi mRNA MAGE A1, MAGE A3, MAGE A1 and A3 and MAGE A1-6 pada lesi sentral, dengan ekspresi 35,7, sensitivitas 78,6, spesifisitas 75,0, Mc Nemar tes didapat kesesuaian yang baik dengan pemeriksaan HPA. Pada pemeriksaan sequencing, didapatkan 1 mutasi genetik dan 1 *single nucleotide polymorphism* pada MAGE A1 lesi sentral.

Kesimpulan

Pemeriksaan biologi molekular dengan menggunakan tumor antigen MAGE A1, MAGE A3, MAGE A1 dan A3 serta MAGE A1-A6 dapat dijadikan alternatif untuk pengembangan diagnosis kanker paru, khususnya kanker paru dengan lokasi di sentral.

Kata Kunci: Melanoma Antigen, *non small cell lung cancer*, biologi molekuler

ABSTRACT

THE DEVELOPMENT OF LUNG CANCER DIAGNOSIS, TYPE OF NON SMALL CELL LUNG CANCER USING THE EXPRESSION OF MELANOMA ASSOCIATED ANTIGEN A1, A3, A1 AND A3 AS WELL AS A1-A6

Background

Melanoma-related antigen (MAGE) is a tumor antigen that is known to play a role in oncogenesis and inhibition of apoptosis. MAGE need to be further investigated compared to the conventional sitology and histopathology examinations.

Methods

This research was an analytic observational diagnostic study conducted at Dr. Soetomo Hospital Surabaya Indonesia in February 2017-September 2019. Sample was a biopsy specimen of lung cancer patients including 31 core biopsy, 37 BAL and 33 forceps biopsy.

Results

Histopathological results showed the majority of adenocarcinomas (31.6%). When compared with the histopathological results, the MAGE gene found no significant differences in the results of the MAGE A1 gene, MAGE A3 gene, MAGE A1 and A3 gene and MAGE A1-A6 gene in central tissue with PA results ($p > 0.05$). Kappa test on the central tissue showed a significant conformity between MAGE A1, MAGE A3, MAGE A1 and A3 genes and MAGE A1-6. There were no significant differences with the histopathological results with the Kappa test results showing a significant conformity ($p < 0.05$), with a sufficient level of suitability. The highest sensitivity and specificity are expression of MAGE A1, MAGE A3, MAGE A1 and A3 and MAGE A1-6 from central lesion, with expression 35,7, sensitivity 78,6, specificity 75,0 with Mc Nemar test 0,056 showed the good suitability with histopathology examinations. The sequencing results were carried out on the specimens. 1 genetic mutations and 1 single nucleotide polymorphis were obtained from MAGE A1 central lesions.

Conclusions

Molecular biology tests using tumor antigen MAGE A1, MAGE A3 gene, MAGE A1 and A3 genes and MAGE A1-A6 genes can be used as an alternative for the development of lung cancer diagnosis, especially lung cancer with a central location.

Keyword: Melanoma Antigen, *non small cell lung cancer*, molecular biology