

ABSTRACT

OVER-EXPRESSION OF MAMMAGLOBIN-A IN PRIMARY BREAST TISSUE TUMOR AND HIGH CONCENTRATION OF *mRNA* MAMMAGLOBIN-A IN PERIPHERAL BLOOD ARE THE RISK FACTORS FOR METASTATIC BREAST CANCER

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Background: Biomarkers used to detect metastases in breast cancer are generally still limited. Mammaglobin A in tissue and blood has recently been found to be a promising biomarker. Therefore, this study will examine the over-expression of Mammaglobin A in primary breast tissue tumor, and the high concentration of Mammaglobin A mRNA in peripheral blood as the risk factors for metastasis of breast cancer.

Methods: The study was conducted at Sanglah General Hospital, July 2017 until March 2018. It is hybrid research design: combination of cross-sectional (n = 70) and case-control (metastasis = 20 and non- metastasis = 20). The expression of protein Mammaglobin in cancer tissue was determined by immunohistochemistry; Mammaglobin A mRNA concentration in peripheral blood was detected by Real Time- PCR.

Results: The mean Mammaglobin A mRNA level of metastatic group was $11,59 \pm 1,37$ and non-metastatic $8,17 \pm 1,27$ fold change relative to housekeeping gene beta microglobulin. Mean Mammaglobin A mRNA levels in the two groups were significantly different ($p < 0.05$). Overexpression of Mammaglobin-A in cancer tissue is 7.36 times for metastasis compared to non- metastatic (OR = 7.36; 95% CI = 1.34-40.55; $p = 0.013$). As well as, high Mammaglobin A mRNA concentration is nine times for breast cancer metastasis compared to non-metastatic group (OR = 9.00; 95% CI = 2.15-37.66; $p = 0.002$).

Conclusion: The mean Mammaglobin A of metastatic group is significantly different from Non-Metastasis. Overexpression of Mammaglobin A and high Mammaglobin A mRNA concentration are influential risk factors for metastatic breast cancer.

Keywords: Mammaglobin A, Metastatic Breast Cancer.