Abstract

Level Of mRNA Of ACADVL Gene In Plasma In Asymptomatic Anthracycline Cardiotoxicity In Breast Cancer

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**Background:** Anthracycline is widely used in cancer treatment. Life threatening cardiotoxicity compromise their usefulness. No specific treatment of anthracycline cardiotoxicity is available. So we would like to investigate for biomarker of anthracycline cardiotoxicity. The project named Genetic susceptibility of cardiotoxicities from Doxorubicin in breast cancer patients presented microarray data of gene expression of anthracycline cardiotoxic. We selected ACADVL gene to this study due to its function. The product of this gene presented at inner wall of mitochondria where the lipid peroxidation occured. This may related to anthracycline cardiotoxicity.

**Method:** 51 female breast cancer patients who receiving doxorubicin and cyclophosphamide (AC) regimen every 3 weeks for 4 cycles were evaluated for cardiac function by echocardiography at baseline and after the 4th cycle chemotherapy. Serial blood sampling were collected and cross sectionally measured for messenger RNA of ACADVL gene in plasma by Real time PCR. Internal control was GAPDH gene.

**Results:** First, We selected 3 samples in cardiotoxic group and 3 samples in normal group, both before and after 1st cycle chemotherapy. Total 12 samples were studied for level of messenger RNA of ACADVL gene. The result revealed no expression of mRNA of ACADVL gene in plasma of both cardiotoxic and non cardiotoxic group (before and after sample). But GAPDH gene level can be detected in all specimens. We decided to stop the further laboratory examination.

**Conclusion:** No expression of ACADVL gene in breast cancer patients plasma. This gene may not related to Anthracycline cardiotoxicity. The further study may focus in other gene that functions compatible with anthracycline cardiotoxicity mechanism.