CARDIOPROTECTIVE EFFECTS OF ECKLONIA CAVA POLYPHENOL AGAINST DOXORUBICIN-INDUCED CARDIOTOXICITY IN AN ANIMAL RAT MODEL WITH THE EVIDENCE OF ELECTRON MICROSCOPIC FINDING

Poster Contributions
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Authors: Hyo-Suk Ahn, Hui Kyung Jeon, Gee-Hee Kim, Woo-Baek Chung, Jung Sun Cho, Mi-Jeong Kim, Eun Joo Cho, Hae-Ok Jung, Ho-Joong Youn, Uijeongbu St. Mary’s Hospital, Uijeongbu, South Korea

Background: Long-term therapy with doxorubicin is associated with a high incidence of a cumulative and irreversible dilated cardiomyopathy, despite of its broad anti-neoplastic effectiveness. The goal of this study was to evaluate the cardioprotective effects and safety of seapolynol (polyphenol purified from Ecklonia cava) against doxorubicin-induced cardiotoxicity in an animal rat model.

Methods and Results: In total 27 rats including doxorubicin and control groups, baseline and 6 weeks follow up echocardiography were practiced. Relative wall thickness, fractional shortening, and left ventricular ejection fraction significantly decreased and the left ventricular end diastolic/systolic dimension significantly increased in single doxorubicin group and low-dose seapolynol plus doxorubicin group. However, there were no interval changes in high-dose seapolynol plus doxorubicin group. Also, electron microscopic finding showed less impaired myofiber and mitochondria in high-dose seapolynol plus doxorubicin group than in single doxorubicin group (Figure).

Conclusions: Our data showed that high-dose seapolynol had cardioprotective effects against doxorubicin-induced cardiotoxicity in an animal rat model with the evidence of electron microscopic finding in addition to echocardiographic results.