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The effectivity of *Artemisia vulgaris* extract on Cyclin-D1 and Ki-67 decreased as a supplementation of adenocarcinoma mammae chemotheraphy (study on C3H mice given AC chemotheraphy regimen)

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Background: The incidence of breast cancer worldwide is still high. Surgery remains the top choice with other modalities of chemotherapy, radiation and suplementation such as *Artemisia vulgaris* (AV).

Aim: The study was aimed to demonstrate that administration of AV extract decreased the expression of Cyclin-D1 and the expression of Ki-67 in adenocarcinoma mammae.

Method: This study used "Post test only control group design" on 24 females C3H mice that were randomly selected and divided into four groups: group K (control), P1 (chemotherapy), P2 (extract) and P3 (combination). Adenocarcinoma mammae comes from the inoculation of donor mice. Chemotherapy of Adriamycin 60 mg/m2 and Cyclophosphamide 600 mg/m2 were given in 2 cycles. AV 13 mg (0.2 ml) was given once daily orally. Cyclin-D1expression and Ki-67 expression were evaluated by imunohistochemical staining.

Result: Mean of Cyclin-D1expression and Ki-67 expression were found in groups K, P1, P2, P3 were 35.30+0.72; 20.38+0.67; 33.50+0.71; 17.36+0.66; and 66.44+0.65; 35.40+0.65; 64.12+0.85; 32.32+0.61. The statistical analysis showed that there were significant differences in the expression of Cyclin-D1 between groups of K vs P1, P3 (p=0.001), P1 vs P2 (p=0.001), P1 vs P3 (p=0.045), P2 vs P3 (p=0.001), and in Ki-67 expression between groups of K vs P1, P3 (p=0.001), P1 vs P2 (p=0.001), P1 vs P3 (p=0.041), P2 vs P3 (p=0.001). Correlation analysis between cyclin-D1 expression and Ki-67 expression showed significant correlation (p=0.030 dan r=0.914).

Conclusion: Artemisia vulgaris is potential as supplementation that can improve the effectivity of Adriamycin-Cyclophosphamide chemotherapy in terms of decreased expression of Cyclin-D1 and expression of Ki-67 adenocarcinoma mammae of C3H mice.

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