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Deputy Minister of Health Malaysia

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## ATHEROSCLEROSIS: CURCUMIN AGAINST HEATED PALM OIL DIET IN OVARECTOMIZED RATS

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### Background:

Heated palm oil has been shown to increase the level of homocysteine; a marker for atherosclerosis in low oestrogen state. Curcumin (Cn), an extract from *Curcuma longa* has been shown to have protective effects against homocysteine. The objective was to study the effects of curcumin on the aorta of ovariectomized rats fed with five-times heated palm oil.

### Materials and Methods:

Eighteen ovariectomized *Sprague-Dawley* rats were divided into three groups. Each group was given rat chow diet mixed with 2% cholesterol. The first group (OVX+Cn) was given curcumin (50mg/kg) only. The second group (5HPO) were given five-times heated palm oil while the third group (5HPO+Cn) were given five-times heated palm oil with curcumin. After four months treatment, blood was taken prior to sacrifice and the aortic tissues were processed for electron microscopic studies.

### Results:

The homocysteine level for 5HPO and 5HPO+Cn groups showed significant difference as compared to the OVX+Cn. The electron microscopic study showed lipid accumulation on the intimal layer for each group. There were presence of mononuclear cells attached on the intimal layer of 5HPO and 5HPO+Cn groups. The internal basal lamina of OVX+Cn was still intact compared to both groups 5HPO and 5HPO+Cn. The endothelial cells present were more numerous in OVX+Cn compared to the 5HPO group.

### Conclusion:

In conclusion, curcumin with dose 50mg/kg had little effects against five-time heated palm oil with high cholesterol diet in oestrogen deficient ovariectomized rats.

### Keywords:

Palm oil, curcumin, homocysteine, aorta