

Effects of EPA+DHA from yellow-stripe scad and salmon on platelet and endothelial cell-related cytokines of healthy overweight Malaysians

ABSTRACT

Introduction: Overweight currently has become a major global burden. Salmon is one of the major sources for fish oil to treat inflammatory related cardiovascular diseases. Yellow-stripe scad (YSS) on the other hand, is a local Malaysian fish which can be a good substitute for salmon; however, the therapeutic effects of YSS is still unclear. **Objective:** Therefore, this study compared the nutritional values EPA+DHA of YSS and salmon on body mass index (BMI), leptin and activation markers for both platelet and endothelial cell. **Methods:** Healthy overweight Malaysian adults (n=45), aged 21-55 years old, were recruited for 6-months cross-over trial study. They were randomised equally to receive eight weeks of either steamed whole YSS fish or salmon fillet, for three days per week, obtaining approximately 7000 mg EPA+DHA weekly. The diets were switched after an eight-week washout period. Baseline dietary fish intakes were similar in the two groups. **Results:** Significant differences observed in serum leptin for YSS-baseline group I and salmon-baseline group II ($p<0.05$). Significant changes were observed in serum P-selectin, sCD40L and IL-1 β in YSS-baseline group I ($p<0.05$) but not in VCAM-1 ($p>0.05$). Significant decreased were also observed in serum vWF and VCAM-I in salmon/baseline group II ($p<0.05$), but not in P-selectin, sCD40L and IL-1 β ($p>0.05$). However, there was no significant differences between YSS and salmon ($P>0.05$) on time and treatment in all variable after 16 week, but there was a significant effect of treatment on sCD40L from YSS and vWF from salmon ($p<0.05$) **Conclusion:** Both YSS and salmon could harmonized EPA+DHA into leptin, platelet and endothelial phospholipid membrane to decreased platelet and endothelial cell activation markers which may contribute to the cardioprotective effect of EPA +DHA. Thus, the health benefits of YSS fish “*ikan selar*” and salmon on leptin and prothrombotic parameter on healthy overweight adults may be similar.

Keyword: EPA/DHA; Leptin; Platelet and endothelial cells markers; YSS; Salmon