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The effects of Eurycoma longifolia on testosterone and blood pressure in high-fat-fed animal model (Article)

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Abstract

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There is increased prevalence of hypertensives among Malaysians in the last decade. The cost of anti-hypertensive agents is also escalating. There is a dire need for cheaper alternative drugs. In tropical regions, there have been claims that Eurycoma longifolia (EL) a local herbal plant is effective in obliterating headache and reducing blood pressure. Most studies had focused on aphrodisiac property of EL which has been shown to enhance testosterone levels in males. This study explored the possible effect of EL as an anti-hypertensive agent and whether the mechanism is related to serum testosterone levels. Twenty four healthy male Sprague-Dawley rats were randomly divided into four groups (n=6): normal diet (ND), normal diet treated with EL (NDEL), high-fat diet (HFD) and HFD treated with EL (HFDEL). EL (15 mg/kg) was administered orally for 12 weeks. The animal's body weight, blood pressure and testosterone level were measured at week 0, 6 and 12. Results showed that the level of testosterone in groups receiving EL were significantly increased ($P < 0.05$) from the untreated groups, in agreement with previous studies report on EL increasing testosterone level. Rats with high fat diet benefitted from treatment with EL extract (HFDEL) as there were reduced systolic and diastolic blood pressure significantly ($P < 0.05$). Despite this effect, there were no significant correlations between blood pressure and testosterone level in HFDEL. There were no changes of blood pressure in rats receiving normal diet with or without EL, but there was a significant negative correlation ($r = -0.846$, $p = 0.034$) between testosterone and diastolic blood pressure in NDEL. This study suggested the presence of anti-hypertensive property of EL in high fat diet induced hypertension, but it not associated with testosterone level. The blood pressure lowering mechanism through testosterone hormone however is only seen in normal diet group. © 2017 Rafidah Hanim Mokhtar et al.

Author keywords

Androgen Cardiovascular Eurycoma longifolia Hypertension Testosterone Tongkat Ali

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