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Anti-inflammatory effects of trihoney in hypercholesterolemic atherosclerotic rabbits: A comparative study with atorvastatin (Article)

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Abstract

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Introduction: Hypercholesterolemia has been proven as a main pathogenic trigger for pathogenesis of atherosclerosis. Atherosclerosis characterised by chronic inflammatory process and increased expression of inflammatory markers. In this study; Trihoney (a combination of three types of natural honey namely: Trigona, mellifera, and Dorsata) was investigated for its anti-inflammatory effect in hypercholesterolemic atherosclerotic rabbits. **Methods:** Thirty male New Zealand white rabbits (NZW) were grouped into: normal diet (C), normal diet with 0.6g/kg/day of Trihoney (C+H), 1% cholesterol diet (HCD), 1% cholesterol diet with 0.6g/kg/day of Trihoney (HCD+H), and 1% cholesterol diet with 2mg/kg/day of atorvastatin (HCD+At.). After 12 weeks of starting the experiment, animals were sacrificed and serum analysed for homocysteine and pro-atherogenic inflammatory markers such as: interleukin-1 β (IL-1 β), interleukin-6 (IL-6), and tumour necrosis factor- α (TNF- α). Fasting serum glucose was analysed to assess glycaemic status. **Results:** Trihoney treated group showed significantly lower ($p < 0.05$) serum IL-1 β and IL-6 compared to the HCD group. Trihoney supplementation resulted in significant ($p < 0.001$) reduction of serum TNF- α compared to HCD group. Experimental group HCD had serum homocysteine level comparable to that of the control groups without any significant difference despite little increase in the mean value. Trihoney treated group had serum homocysteine comparable to the controls. All experimental groups showed fasting serum glucose comparable to the control. **Conclusion:** This study showed that Trihoney has an anti-inflammatory function and may be used as an adjuvant to statins for management of atherosclerotic cardiovascular diseases even in diabetic subjects. © 2020 UPM Press. All rights reserved.

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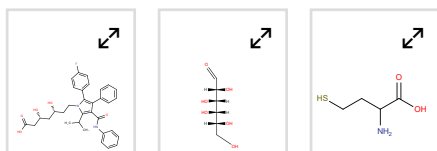
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