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The effects of sugar cane policosanol on the LDL, HDL, Triglyceride and Total cholesterol levels of dyslipidemic patients: A meta-analysis

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Policosanol, a plant-wax extract composed of a mixture of eight high molecular mass aliphatic alcohols, is commonly used as a supplement to help lower cholesterol levels in patients with dyslipidemia. Despite its widespread use, studies showed conflicting conclusions regarding its efficacy. This study aims to consolidate the available research findings regarding the efficacy and benefits of policosanol and to compare the effects of policosanol versus placebo on the lipid profile of dyslipidemic patients. A literature search was done using PUBMED database using "Policosanol (MESH or free text) AND dyslipidemia (MESH or free text)" limited to human subjects, male and female, clinical trials, and randomized controlled trials. Three independent reviewers conducted validity assessment for each included studies. Review Manager was used to construct Forest and funnel plots for each outcome. Subgroup analysis was likewise done. This meta-analysis includes a total of 10 randomized controlled trials, double blinded, and placebo controlled studies. A total of 875 participants were given policosanol, irrespective of dosage and the duration of treatment while 878 received placebo treatment. Overall percent change in total cholesterol favored policosanol (-7.24[-11.99, -3.29]) with a significant difference (p=0.0003). A significant difference was likewise seen in LDL-C (p=0.001) also favoring policosanol (-8.67[-13.99. -3.34]), as well as in HDL-C (9.94 [3.32, 15.65], p=0.003). However, the studies were very much heterogeneous (p<0,00001, I2=100%). No significant difference (p=0.30) was seen in terms of triacylglycerides. On subgroup analysis using 10mg of policosanol versus placebo for 12 weeks, a significant difference (p<0.00001) was found favoring policosanol in terms of total cholesterol (-17.93 [- 19.85, - 16.00]), LDL-C (-22.08 [-25.91, -18.26]) and HDL-C (23.05 [20.28, 25.82]). In conclusion, policasanol was found to significantly improve the lipid profile parameters specifically total cholesterol, LDL-C, and HDL-C but not TAGs in dyslipidemic patients at dose of 10mg for 8 weeks. Side effects were very minimal; policosanol is generally safe and well tolerated.

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