Short Oral Abstract 9 - Effect of oat β-glucan on markers of lipid control: a systematic review and meta-analysis (Thanh Ho, Canada)

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Objective: Low-density lipoprotein cholesterol (LDL-C) lowering has been the focused of cardiovascular disease (CVD) prevention, however, despite highly effective statin therapy for LDL-C lowering, residual risk remains. Therefore, alternative lipid targets, ie. apolipoprotein B (apoB) and non-high-density lipoprotein cholesterol (non-HDL-C), have been implemented to assess residual risk. β-glucan, the main soluble fibre found in oats, is often ascribed with being the main active component responsible for the cholesterol-lowering effect. Given the established LDL-C lowering effect of oat β-glucan (OβG), this systematic review and meta-analysis seeks to update the evidence in the context of OβG and LDL-C and additionally, to summarize and quantify the effect of OβG on the alternate lipid targets, apoB and non-HDL-C, for the first time.
Methods: MEDLINE, Embase, CINAHL, and the Cochrane Central Register of Controlled Trials were searched. Randomized controlled trials ≥3 weeks reporting OβG consumption on LDL-C, apoB and/or non-HDL-C. Two independent reviewer's extracted relevant data and assessed study quality and risk of bias. Data were pooled using the generic inverse variance method with random effects models and expressed as mean differences with 95% confidence intervals (CI's). Heterogeneity was assessed (Cochran Q-statistic) and quantified (I^2).
Results: 51 trials were included (n=3420). A median dose of 3.6 g/d significantly lowered LDL-C (MD=-0.23 [95% CI: -0.33, -0.14]; p<0.00001), apoB (MD=-0.05 [95% CI: -0.08, -0.02]; p<0.00001) and non-HDL-C (MD=-0.24 [95% CI: -0.28, -0.20]; p<0.00001) compared with control diets.
Conclusion: Pooled analyses confirm an LDL-C lowering effect with consumption of OβG. It additionally implicates a beneficial effect on alternate lipid targets, apoB and non-HDL-C. Though, the results may be limited by the short duration, poor quality of the majority of the trials, and significant between-study heterogeneity.
Trial Registration: ClinicalTrials.gov NCT02068248
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Short Oral Abstract 10 - The Effects of Maternal Diet on Glycemic Control: A Systematic Review and Network Meta-Analysis (Vanessa Ha, Canada)

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