A systematic review and meta-analysis investigating the effects of a bilberry and blackcurrant anthocyanin extract (MEDOX®) on the lipid profile: Preliminary results

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BACKGROUND

Anthocyanins have been associated with improvements in health for many years, however one clear direction of research is around cardiovascular disease. A bilberry and blackcurrant anthocyanin extract (known commercially as MEDOX®) has been investigated across a number of different clinical trials, yet with no definitive review quantifying a tangible health benefit. Thus, the primary objective of the research was to report a systematic review and meta-analysis of randomized controlled trials that have been conducted using MEDOX®, in order to assess any influence on markers of cardiovascular disease risk, namely the lipid profile.

METHODS

All known studies (n=17) supported by the manufacturers of MEDOX® were collected. Additionally, key databases were searched for unpublished and published trials, searches covered from January 1950 to January 2019:

- **PubMed** (which included MEDLINE www.ncbi.nlm.nih.gov/pubmed)
- **Cochrane Central Register of Controlled Trials** (www.cochranelibrary.com/central)
- **International Clinical Trials Registry Platform** (ICTRP - http://apps.who.int/trialsearch/)
- **International Standard Randomized Controlled Trials Number Register** (www.isrctn.org)

For the meta-analysis, a random effects model was used, indicating the weighted mean difference between MEDOX® and a placebo.

Figure 1a

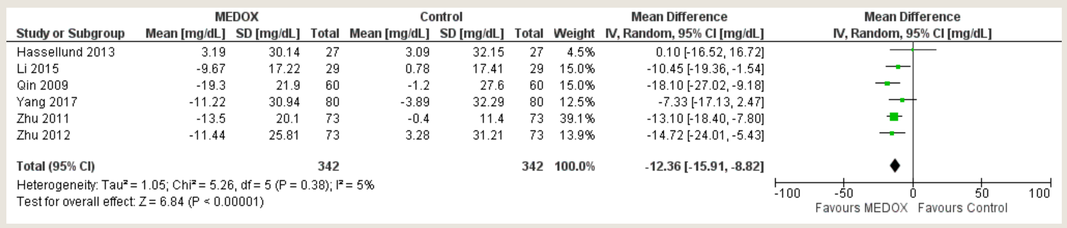

Figure 1b

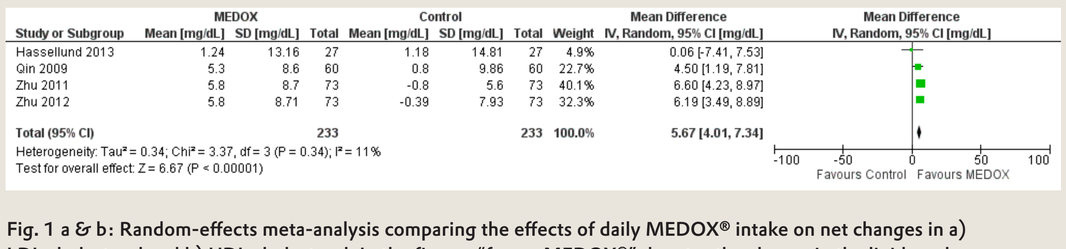

Fig. 1 a & b: Random-effects meta-analysis comparing the effects of daily MEDOX® intake on net changes in a) LDL cholesterol and b) HDL cholesterol. In the figure, "favors MEDOX®" denotes the change in the lipid marker concentrations from baseline (net change), squares denote mean differences [with 95% CIs (lines)], and "total" denotes the cumulative n from all included studies, showing total participants and the weighted mean difference.

RESULTS

Seven studies were eligible for inclusion for the meta analysis; one study did not have available data. Due to a lack of reporting on randomization, allocation and blinding for four of the studies a bias cannot be excluded. All studies investigated participants with established cardiovascular disease risk factors (i.e. deranged lipid profile), pre-hypertension or diabetes.

As shown in Fig. 1, results indicate that MEDOX® significantly reduces LDL cholesterol and increases HDL cholesterol. In support of this, there was also a significant reduction in ApoB (WMD 6.40mg/dL (95% CI: -11.38, -1.43), P=0.01) and increase in ApoA1 (WMD 4.89mg/dL (95% CI: 0.12, 9.67), P=0.04).

CONCLUSION

These preliminary results indicate that MEDOX® has a consistent and positive influence on the lipid profile of those individuals at increased risk of cardiovascular disease. At present it appears the amelioration of elements of the lipid profile is unique to the combination of bilberries and blackcurrants found in MEDOX®; with evidence indicating that other berries may reduce LDL cholesterol but have no effect on HDL cholesterol.[1] However, further research is now needed to understand the influence in healthy people across the age-groups in health areas such as cognitive health, where CVD risk factors have been shown to also influence outcomes.

References:
[1] Huang et al. 2016 Scientific Reports | 6:23625 | DOI: 10.1038/srep23625.

For a list of all included studies in the systematic review, please contact Dr. Laura Headley via email: laura.headley@evonik.com.

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