VITAPLUS

Benecol®

ONE BOTTLE A DAY. TO HELP PATIENTS LOWER CHOLESTEROL.

CLINICAL SUMMARY

A comparison of the LDL-cholesterol lowering efficacy of plant stanols and plant sterols over a continuous dose range: Results of a meta-analysis of randomized, placebo-controlled trials

Musa-Veloso K, Poon TH, Elliot JA, Chung C. *Prostaglandins Leukot Essent Fatty Acids.* 2011;85:9–28.

In support of:
Singapore Heart Foundation
Your Heart We Care

^Plant stanols have been shown to lower blood cholesterol. High blood cholesterol is a risk factor in the development of coronary heart disease.

MUSA-VELOSO AND COLLEAGUES PERFORMED A META-ANALYSIS ON 62 RANDOMIZED, PLACEBO-CONTROLLED TRIALS TO DETERMINE THE LDL-C LOWERING EFFECT OF PLANT STANOLS*

Background

- Plant stanols are plant-based compounds that lower cholesterol and occur naturally in certain foods, such as wheat and rye.[1,2]
- Multiple guidelines support the daily use of plant stanols found in ***VITAPLUS*** Benecol® to manage hyperlipidaemia.[3-8]
- **However, it is unclear whether greater reductions in blood lipid levels could be achieved with higher daily intakes of plant stanols.**
- **This clinical summary will focus on the meta-analysis for plant stanols only.**

Literature identification

- Musa-Veloso and colleagues used **14** literature databases to retrieve studies that had keywords associated with plant stanols and plant sterols published up to 2010.[9]

Study inclusion and exclusion criteria

STUDIES WERE **INCLUDED** INTO THE META-ANALYSIS IF:

- they were randomized, placebo-controlled trials (parallel-arm or crossover) conducted in human adults (age >19 years).[9]
- the active treatment comprised plant stanols of a minimum duration of 2 weeks.[†9]
- fasting plasma or serum LDL-C were measured as a primary or secondary outcome.[9]

STUDIES WERE **EXCLUDED** INTO THE META-ANALYSIS IF:

- results reported in abstract form only or were kin (duplicate) publications.[9]
- studies investigated participants who were colectomised or who were either homo- or heterozygous for sitosterolaemia.[9]

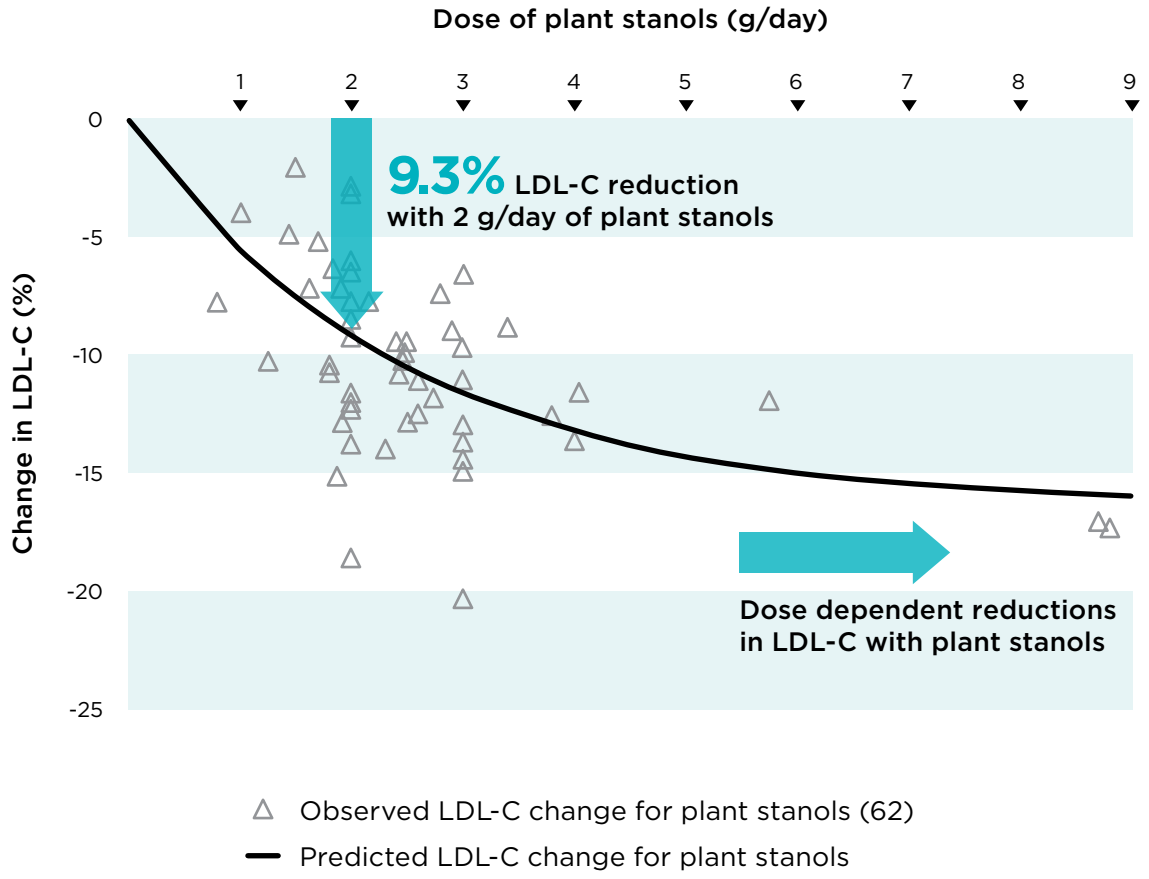
Key outcome measure

- Dose-response relationships for reduction in LDL-C were modelled for plant stanols.

*A trial, or stratum as used by Musa-Veloso, *et al.* was defined as a set of data comprising results from an active treatment and a placebo. For parallel studies, two or more strata were considered to be from the same study if they were each compared to the same placebo arm; in contrast, two or more strata were considered to be from different studies if they were designated as unique studies by the authors or if each active treatment was associated with its own placebo. †For blends of plant stanols and plant sterols, plant stanols had to comprise ≥85% of the blend to be included as a strata; otherwise, the treatment was considered a blend of plant stanols and plant sterols and was excluded.

META-ANALYSIS OF 62 RANDOMIZED, PLACEBO-CONTROLLED TRIALS SHOWED THAT THE ESTIMATED LDL CHOLESTEROL LOWERING WITH 2G/DAY OF PLANT STANOLS WAS 9.3%

CHANGE IN LDL-C (%) WITH INCREASING PLANT STANOLS DOSE*[9]



- Intakes of plant stanols in excess of the recommended 2g/day were associated with additional and dose-dependent reductions in LDL-C.[9]

*Daily doses are expressed as free plant stanols. The number of plant stanol study arms (or strata) is indicated in parentheses.

CONCLUSIONS

9.3%

A meta-analysis of clinical data demonstrated that the estimated LDL cholesterol lowering of 2g/day of plant stanols was 9.3%.[9]

2g/ day

Intakes of plant stanols in excess of the recommended 2g/day were associated with dose-dependent reductions in LDL-C.[9]

Given the linear relationship between reductions in LDL-C and the reduction in CHD risk, higher intakes of plant stanols may further reduce the risk of coronary events.[9]

Recommend *VITAPLUS* Benecol® with 2g of plant stanols & provide patients with a simple once-daily, guideline-recommended solution that effectively reduces cholesterol and potentially inspires additional healthy diet and lifestyle changes.

Visit the *VITAPLUS* Benecol® website at www.benecol.com.sg

CHD, coronary heart disease; **LDL-C**, low-density lipoprotein cholesterol.

References: **1.** Trautwein EA, *et al. Nutrients* 2018;10:1262. **2.** Gylling H, *et al. Atherosclerosis* 2014;232:346–60. **3.** Brunzell JD, *et al. J Am Coll Cardiol* 2008;51:1512–24. **4.** American Diabetes Association. *Diabetes Care* 2015;38:S49–57. **5.** Wiegman A, *et al. Eur Heart J* 2015;36:2425–37. **6.** Jacobson TA, *et al. J Clin Lipidol* 2015;9:S1–122. **7.** Ministry of Health (MOH) Singapore. Lipids MOH Clinical Practice Guidelines 2016. Available from: https://www.moh.gov.sg/docs/librariesprovider4/guidelines/moh-lipids-cpg---booklet.pdf. (accessed 5 April 2021). **8.** Mach F, *et al. Eur Heart J* 2020;41:111–88. **9.** Musa-Veloso K, *et al. Prostaglandins Leukot Essent Fatty Acids* 2011;85:9–28.

VITAPLUS Benecol® is a special purpose food intended for people who want to lower their blood cholesterol level. Each serving of 70ml contains 2g of plant stanols. Consumption of at least 2g/day of plant stanols has been shown to lower blood cholesterol levels. Include ***VITAPLUS*** Benecol® as part of a balanced and varied diet.

Consumption of more than 3g/day of plant stanols does not provide any additional benefit in lowering blood cholesterol. May not be nutritionally appropriate for pregnant and breast-feeding women and children under five years old.

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