**Systematic review and meta-analysis: the effects of fermented milk with Bifidobacterium lactis CNCM I-2494 and lactic acid bacteria on gastro-intestinal discomfort in the general adult population.**

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**Background**

Digestive symptoms are very common in the general adult population. It has been suggested that probiotics might alleviate digestive symptoms and improve gastrointestinal (GI) discomfort. Not all probiotics exhibit the same metabolic activities or physiological effects on the host and therefore systematic reviews and meta-analyses on probiotics should only be performed on well-defined probiotic strains or strain combinations.

**Aim**

This systematic review and meta-analysis aimed to evaluate the effectiveness of a specific probiotic fermented milk (PFM) that contains Bifidobacterium lactis CNCM I-2494 and lactic acid bacteria, on GI discomfort in the general population.

**Methods**

Six relevant biomedical and multidisciplinary science databases were searched up to February 2015. Grey literature was identified via OAISTER, OpenGrey and NTIS. Unpublished studies were identified from clinical trial registries and conference proceedings.

Eligible studies were prospective double-blind randomised controlled trials comparing PFM with a control dairy product for at least four weeks; recruiting individuals aged 18 and over; from the general population with minimal GI discomfort at study entry and assessing the effectiveness of PFM on GI discomfort or comfort.

Two reviewers conducted the screening and data extraction/quality assessment processes. Meta-analyses using random-effects models, with individual subject data were undertaken.

Two outcome measures for GI discomfort were considered: i) a dichotomous responder score to capture an overall assessment of GI discomfort/well-being in the general population. This meta-analysis shows that the consumption of this PFM containing B. lactis CNCM I-2494 and lactic acid bacteria is associated with a consistent and clinically significant improvement of outcomes related to GI discomfort in the general population. Future studies should investigate the profile of individuals most likely to respond.

**Results**

The consumption of PFM was associated with a significant improvement of GI discomfort (responder rate) over the control product (OR = 1.48; 95% CI 1.07, 2.05) (Fig 2) with a NNT of 10.2 (95% CI 5.6, 15.9). PFM was also superior to the control for the reduction of digestive symptoms measured by a composite score (SMD = -0.21 95% CI -0.37, -0.05) (Fig 3). Sensitivity analyses produced similar results, and the heterogeneity of the studies was minimal.

**Conclusion**

This meta-analysis shows that the consumption of this PFM containing Bifidobacterium lactis CNCM I-2494 and lactic acid bacteria is associated with a consistent and clinically significant improvement of outcomes related to GI discomfort in the general population. Future studies should investigate the profile of individuals most likely to respond.


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