Human guts are occupied with 100–1000 microbial species which plays a significant role in the host health and disease (1). Lactobacillus species have shown a paradoxical effect in relation to body composition. Clinical trials using lactobacillus gasseri (L. gasseri) have demonstrated an anti-obesity effect, exhibiting significant reductions in visceral and subcutaneous fat, body weight, body mass index (BMI), and waist and hip circumferences (2). Moreover, L. gasseri has contributed to the regulation of abdominal obesity and showed a potential immunomodulatory effect in infants as well as boosting the immune system of healthy adults (3, 4). Rodent models have found an association between the presence of L. gasseri and positive outcomes in relation to weight loss, fasting blood glucose (FBS) (5), and inflammation (6). The aim of this study to look at the effect of 4 weeks of supplementation with L. gasseri THT 031301 on obesity, glycaemic, and inflammatory markers.

This is a single centre, double-blind, randomised, placebo-controlled pilot study that recruited fourteen adult subjects with BMI > 25 kg/m², who were randomly assigned to receive either a supplement containing L. gasseri THT 031301 (n = 6) or a placebo (n = 7). Pregnant and lactating women, subjects on anti-diabetic medications, and subjects who have undergone heart surgery have been excluded. Consented subjects were asked to consume 2 capsules per day continuously for 4 weeks. L. gasseri THT 031301 daily dosage was approximately 6x 10⁹cfu. Alterations in obesity markers were assessed using BMI and waist-to-height ratio (WtHR), and inflammatory markers were measured using enzyme-linked immunosorbent assay (ELISA). FBS level, HbA1c, and insulin measured to indicate the glycaemic markers. Each marker measured at baseline and after 4 weeks.

After 4-weeks supplementation, a significant reduction in waist circumference (WC) (P = 0.022) and (WtHR) (P = 0.035) was identified in the THT 031301 compared to the placebo. Within-group comparisons attributed this finding to a significant increase in WC (93.4 ± 10.1 vs 94.6 ± 9.5, P = 0.040) and WtHR (0.55 ± 0.04 vs 0.56 ± 0.04, P = 0.047) in the placebo group. THT 031301 identified a small increase in the anti-inflammatory cytokine IL-10; however, this was not statistically significant. No changes were identified with the glycaemic markers HbA1c, fasting blood glucose, or insulin.

The current pilot study suggests a potential anti abdominal obesity effect of L. gasseri THT 031301 on the glycaemic markers in healthy adults, but this effect needs to be investigated in a large adequately powered RCT. The study did not find a significant effect of L. gasseri THT 031301 on the glycaemic markers. Future studies might recruit obese and overweight subjects or subjects with diabetes to confirm the anti-obesity, anti-diabetic and anti-inflammatory effect of L. gasseri THT 031301.

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References