P01

Wheat bran plus resistant starch-enriched food beneficially modulate the colonic microflora in individuals with ulcerative colitis
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Background – Current treatments and outcomes for Ulcerative Colitis (UC), a form of inflammatory bowel disease (IBD), are generally disappointing hence new forms of therapy are urgently required. It has been proposed that manipulation of the gut microbiota with a diet containing wheat bran plus resistant starch (WBRS) may have the ability to modulate the colonic microflora towards a more remedial community and thus potentially act as a novel therapeutic approach in the management of UC.

Objective – To examine the effect of a diet containing high (~32 g/day) levels of WBRS compared to a diet containing low (~10 g/day) levels of WBRS, on the composition of the colonic microflora in individuals with UC.

Design – Single blind randomised 48-day crossover dietary intervention, where a total of five subjects (two women, three men) between the age of 18 and 54 years with UC in remission, consumed dietary supplements containing low and high levels of WBRS.

Outcomes – Compared to the low WBRS diet, the high WBRS diet significantly reduced the numbers of the Bacteroides-Prevotella spp. group (P = 0.043) and increased the numbers of the Bifidobacterium spp. group (P = 0.04). No effects on the total number of bacteria, Enterobacteriaceae including Escherichia coli, Clostridium spp. group, Eubacterium spp. group, and Lactobacillus spp. group were observed.

Conclusions – Addition of high level WBRS supplements to the diet of UC subjects provided favourable changes to specific groups of bacteria, in particular the Bacteroides-Prevotella spp. group and the potentially beneficial Bifidobacterium spp. group, which suggest this novel combination of dietary fibres may be useful in the management of UC.

P02

The effect of multivitamin supplementation on nutritional status and quantitative heel ultrasound in aged care residents
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Background – Food fortification and/or multivitamin supplementation may improve nutritional status in aged care residents who are at risk of malnutrition and related diseases.

Objective – To assess the effectiveness of a multivitamin tablet, and calcium-vitamin D3 fortified milk supplementation for six months, on serum indices of nutritional status and bone quality (quantitative heel ultrasound, QUS) in a group of Australian aged care residents.

Design – With a 2x2 factorial design, subjects were randomized to receive either a placebo (P) or multivitamin (MV) tablet containing various vitamins including 5 µg cholecalciferol, 250 mg calcium carbonate, 20 µg cyanocobalamin and 200 µg folic acid (1 tablet/day), and, matched on mobility levels, to receive fortified milk (7 g protein, 200 mg calcium and 5 µg cholecalciferol), or usual milk for six months. Measurements of body weight, QUS, and serum concentrations of nutrients were performed at baseline and at six months.

Outcomes – Low compliance in consuming the fortified milk caused by the difficulties in delivering the milk to the participants led to the cessation of milk after 16 weeks of the study. Therefore only the effect of multivitamin supplementation was examined. Of 115 participants entering the study, 92 (49 MV and 43 P) completed the study. Following supplementation after six months, compared to the P group, the MV group had a greater rise in serum 25(OH)D (33.4 ± 2.6 nmol/l), folate (13.4 ± 2.8 nmol/l), and vitamin B12 (163.5 ± 40.3 pmol/l). The number of participants with adequate 25(OH)D concentrations (>50 nmol/l) increased from 23% to 77% for the MV group, and was reduced from 17% to 10% for the P group. After adjustment for baseline levels, the MV group had an improvement in QUS by 2.7 dB/MHz, compared to -2.5 dB/MHz for the P group (P=0.041).

Conclusions – Daily multivitamin supplementation improved nutritional status with respect to serum 25(OH)D, and raised vitamin B12 and folate concentrations. Additionally, there was an indication of a positive effect on bone density; this could in the long term contribute to a reduction in falls and fractures.