

Synbiotics Effective at Reducing Colon Cancer Markers

By Stephen Daniells

08/02/2007- A synbiotic supplement comprising the pre-biotics inulin and oligofructose, and a mixture of two probiotics, successfully reduced several markers of colon cancer, say results of a major Europe-wide study.

Colon cancer is an area that has a growing but already significant number of animal studies linking prebiotic and/or probiotic intake to a risk reduction. The results of the EU-sponsored SynCan project show that the combination of pre- and probiotics could favourably shift the populations of faecal bacteria, with larger populations of protective bacteria and reduced numbers of cancer-promoting bacteria.

The supplement was also associated with a decrease in the potential of faecal water to damage DNA or cellular junctions of cultured colon cancer cells.

“The synbiotic intervention resulted in significant alterations in the composition of the colonic bacterial ecosystem, which presumably have consequences for the metabolic activity of this organ,” wrote the researchers in the *American Journal of Clinical Nutrition*.

Eighty people (43 with colonic polyps, 37 with colon cancer) were recruited for the double-blind placebo-controlled design for 12 weeks, and randomly assigned to receive either placebo or the synbiotic supplement comprising Orafiti’s Synergy1 (12 grams per day) and a probiotic (*Lactobacillus* GG and *Bifidobacteria*12).

The researchers report that the beneficial bacterial strains *Lactobacillus* and *Bifidobacterium* increased in both polypectomised (18 and 17 per cent, respectively) and cancer patients (8 and 12 per cent, respectively), as would be expected on ingestion of the probiotics.

Populations of *Clostridium perfringens*, a strain reported to convert dietary substances to carcinogenic compounds, decreased significantly in the polyp patients by 32 per cent. A 22 per cent reduction was recorded in the colon cancer patients.

Markers of DNA damage were also reduced in the synbiotic-supplemented group, compared to placebo, particularly for the polyp patients, said the researchers.

“This result provides indirect evidence that genotoxin exposure in the colon decreased at the end of the intervention period,” said the researchers.

The researchers noted that no effect on apoptosis (programmed cell death), colonic inflammation, or tumour cell spread was observed in either group.

“Our results offer valuable corroboration of the wealth of animal data in the field and suggest that synbiotics of the type studied in the present study may represent a feasible means of chemoprevention of colon cancer in humans,” wrote lead author Joseph Rafter from the Karolinska Institute.

The SynCan project was supported by the European Commission and comprised nine research institutes and with Belgium’s Orafit as an industrial partner. The project consisted of a long-term rat study and a human dietary intervention to test the effects of the synbiotic supplement on colon cancer risk.

“Future research should focus on the effects of prebiotics and probiotics separately,” concluded Rafter.

There are 363,000 new cases of colorectal cancer every year in Europe, the incidence of the cancer is rising, especially in Southern and Eastern Europe. Eighty per cent of colorectal cancers may be preventable by dietary changes.

It is also one of the most curable cancers if diagnosis is made early.

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“Dietary synbiotics reduce cancer risk factors in polypectomized and colon cancer patients”

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