

Research No.(8):

Saccharomyces boulardii inhibits the expression of pro-inflammatory cytokines and inducible nitric oxide synthase genes in the colonic mucosa of rats experimentally- infected with Blastocystis subtype-3 cysts

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Abstract:

Blastocystis spp. is the most frequent infectious unicellular, luminal parasite in all species of animals and humans. It has been linked to diarrhoea and irritable bowel syndrome. Saccharomyces boulardii (Sb) is a widely used probiotic that previously showed efficacy against several intestinal pathogens.

The aim of this study

was to investigate the therapeutic role of Sb on Blastocystis spp.

Methods:

Five groups of Blastocystis subtype-3 infected rats were treated with either live Sb alone, metronidazole (MTZ) alone, Sb extract, both Sb and MTZ, or placebo-treated besides the noninfected control group. Assessment of treatment effectiveness was done by study of parasitological cure rate, histopathological effect and analysis of the colonic mucosal level of mRNAs expressions for the proinflammatory cytokines interleukin-6 (IL-6), IL-8, tumour necrosis factor alpha (TNF- α) and Inducible nitric oxide synthase (iNOS) by real-time reverse transcription-polymerase chain reaction (real-time RT-PCR).

Results:

showed that live Sb significantly improved the histological characteristics and decreased the cytokines and iNOS in the colonic mucosa. Co-administration of live Sb together with MTZ gave a better effect than other treatments and had early efficacy and revealed a 100% reduction of the parasite stages from both the stool and intestinal wash fluid.