Natural almond skin reduced oxidative stress and inflammation in an experimental model of inflammatory bowel disease.

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Abstract:
The aim of the present study was to examine the effects of natural almond skin (NS) powder inmice subjected to experimental colitis. Colitis was induced in mice by intracolonic instillation of dinitrobenzene sulfonic acid (DNBS). NS powder was administered daily orally (30 mg/kg). Four days after DNBS administration, colon NF- κB and p-JNK activation was increased as well as TNF-α and IL-1β productions. Neutrophil infiltration, by myeloperoxidase (MPO) activity, in the mucosa was associated with up-regulation of ICAM-1 and P-selectin. Immunohistochemistry for i-NOS, nitrotyrosine and poly (ADP-ribose) polymerase (PARP) showed an intense staining in the inflamed colon. Treatment with NS powder significantly reduced the appearance of diarrhea and body weight loss. This was associated with a significant reduction in colonicMPO activity. NS powder also reduced NF-κB and p-JNK activation, the pro-inflammatory cytokines release, the appearance of i-NOS, nitrotyrosine and PARP in the colon and reduced the up-regulation of ICAM-1 and the expression of P-selectin. The results of this study suggested that administration of NS powder may be beneficial for treatment of inflammatory bowel disease.