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The role of dietary polyphenols in the management of inflammatory bowel disease.

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Abstract

Inflammatory bowel disease (IBD) is an idiopathic chronic, relapsing inflammation of the bowel which is caused by dysregulation of the mucosal immune system. Polyphenols as the secondary plant metabolites universally present in vegetables and fruits and are the most abundant antioxidants in the human diet. There is evidence demonstrating the beneficial health effects of dietary polyphenols. This review criticizes the potential of commonly used polyphenols including apple polyphenol, bilberry anthocyanin, curcumin, epigallocatechin-3-gallate (EGCG) and green tea polyphenols, naringenin, olive oil polyphenols, pomegranate polyphenols and ellagic acid, quercetin, as well as resveratrol specifically in IBD with an emphasis on cellular mechanisms and pharmaceutical aspects. Scientific research confirmed that dietary polyphenols possess both protective and therapeutic effects in the management of IBD mediated via down-regulation of inflammatory cytokines and enzymes, enhancing antioxidant defense, and suppressing inflammatory pathways and their cellular signaling mechanisms. Further preclinical and clinical studies are needed in order to understand safety, bioavailability and bioefficacy of dietary polyphenols in IBD patients.

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