Abstract


Glutamine and the regulation of intestinal permeability: from bench to bedside.

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PURPOSE OF REVIEW: Glutamine is the most abundant amino acid in plasma and plays a key role in maintaining the integrity of intestinal barrier.

RECENT FINDINGS: Experimental studies showed that glutamine is able to modulate intestinal permeability and tight junction protein expression in several conditions. Recent articles underlined its putative beneficial role in gastrointestinal disorders such as irritable bowel syndrome.

SUMMARY: Glutamine is a major nutrient to maintain intestinal barrier function in animals and humans. Depletion of glutamine results in villus atrophy, decreased expression of tight junction proteins and increased intestinal permeability. Moreover, glutamine supplementation can improve gut barrier function in several experimental conditions of injury and in some clinical situations. Furthermore, preventive effects of glutamine in experimental models of intestinal injuries have been recently reported. Despite promising data in experimental models, further studies are needed to evaluate glutamine supplementation in clinical practice.

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