



Autacoids in Gastrointestinal Health: A Look at Serotonin and Bradykinin

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INTRODUCTION

Gastrointestinal health is intricately regulated by a variety of autacoids, which are locally acting signaling molecules that influence processes such as digestion, gut motility, and blood flow in the digestive system. Two crucial autacoids in gastrointestinal health are serotonin and bradykinin. In this article, we will explore the roles these autacoids play in maintaining the equilibrium of the digestive system and their impact on gut function.

DESCRIPTION

Serotonin, a neurotransmitter with multiple functions, is found not only in the brain but also in the gut, where it regulates bowel movements and helps control various gastrointestinal functions. Bradykinin, on the other hand, is a peptide involved in inflammation and pain signaling, but it also plays an essential role in blood flow and nutrient absorption within the digestive system. Serotonin, often referred to as the “happy hormone,” is not limited to influencing mood. In the gastrointestinal tract, it has a vital role in regulating gut motility, which includes the contraction and relaxation of the muscles that move food and waste through the digestive system. Over 90% of the body's serotonin is produced in the gut, primarily by enterochromaffin cells. This locally produced serotonin helps control processes like peristalsis, the coordinated wave-like contractions that push food through the intestines. Serotonin also influences appetite and the sensation of fullness. When serotonin levels are low, it can lead to feelings of nausea and contribute to digestive disorders such as irritable bowel syndrome. Medications targeting serotonin receptors are commonly used to manage various gastrointestinal conditions, including IBS and nausea associated with chemotherapy. Beyond its role in motility and satiety, serotonin in the gut has connections to immune function and inflammation. Immune cells in the gut can produce serotonin, and this local production is believed to influence the

gut's immune response. Furthermore, imbalances in gut serotonin have been linked to various gastrointestinal disorders, including irritable bowel syndrome and inflammatory bowel disease. Understanding the role of serotonin in these conditions is a key area of research and potential therapeutic development.

Bradykinin is a peptide that is typically associated with inflammation and pain signaling. However, in the context of the digestive system, it has an important role in blood flow regulation. Bradykinin helps to relax smooth muscles in blood vessels in the gastrointestinal tract, leading to vasodilation. This increased blood flow is essential for nutrient absorption in the intestines and overall gastrointestinal health. While bradykinin has vasodilatory effects, an imbalance can lead to complications. Excessive bradykinin activity is associated with conditions like angioedema, which results in swelling of the deep layers of the skin and mucous membranes. Medications targeting bradykinin receptors can be used to manage such conditions and maintain the balance of bradykinin's actions in the gut [1-4].

CONCLUSION

In conclusion, serotonin and bradykinin are essential autacoids in the gastrointestinal system. Serotonin regulates gut motility and appetite, while bradykinin plays a key role in maintaining blood flow and nutrient absorption in the digestive tract. The balance of these autacoids is crucial for overall gastrointestinal health, and their roles in the gut extend beyond their better-known functions in other areas of the body. A deeper understanding of serotonin and bradykinin in gastrointestinal health can lead to improved treatments for digestive disorders and contribute to our knowledge of the complex regulation of the digestive system.

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CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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