

Immunology of Vasoactive Intestinal Peptide

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DESCRIPTION

Vasoactive intestinal peptide (VIP) plays important roles in many biological functions, such as, stimulation of contractility in the heart, vasodilation, promoting neuroendocrine-immune communication, lowering arterial blood pressure, and anti-inflammatory and immune-modulatory activity. Osteoarthritis (OA) is a chronic and degenerative bone disease, which is one of the most common causes of disability and most common in both sexes as people become older. Interestingly VIP can prevent chronic cartilage damage and joint remodeling. This review article provides update information on the association of VIP and OA and its treatment. Evidences suggest that VIP is down-regulated in synovial fluid of OA, and VIP down-regulation leads to increase in the production of pro-inflammatory cytokines that might contribute to the pathogenesis of OA; however contradictory reports also exist suggesting that accumulation of VIP in joints can also contribute OA.

A number of studies indicated that up-regulation of VIP can counteract the action of pro-inflammatory stimuli and alleviate the pain in OA. More clinical investigations are necessary to determine the biology of VIP and its therapeutic potential in OA that might represent the future standards of care for OA.

Conservation of health is reliant on various regulatory interactions among organ systems. It is well recognized as the statement amid the three major systems involved in homeostasis such as endocrine and immune systems, nervous, as well as the environmental and genetic influences on this circuitry. Thus, neurological and psychiatric mechanisms have been labeled in exacerbation of contagions, cancer, or additional immune-related problems. Inversely, an immune etiology has been allied with different nervous activities, such as chronic fatigue, Alzheimer's disease, or manifold sclerosis.

A significant fact for the comportment of this circuitry, as the result of the communication among various fields of research, it's the demonstration that the cells of the immune systems, nervous, and endocrine synthesize and secrete similar substances and hold similar receptors for them, thus suppressing conventional variations between neurotransmitters, hormones as well as immune mediators.

The detail that endocrine systems and nervous shared the same

mediators was soon recognized, and it was advanced when the immune system was elaborated in this circuitry. Vasoactive intestinal peptide (VIP) is a neuropeptide with a comprehensive distribution in the body that utilizes very vital pleiotropic utilities in numerous systems. It has been longly identified that irregular levels of VIP or its receptors are connected to the beginning and the expansion of numerous pathologies. As long as it shows an imperative role in the directive of the body function, an extreme or incomplete production of this neuropeptide can central to unadorned diseases. In several of them, VIP misregulation is the reason for pathology.

Being challenging, this neuropeptide could be remembered for the gathering of cytokines since it is created and discharged by various resistant equipped cells because of different invulnerable signs, plays a wide range of immunological capacities, and applies them, in a paracrine and additionally autocrine way, through three diverse explicit receptors.

Although VIP has been traditionally considered as an invulnerable depressant specialist, and its principal depicted job has been as a mitigating factor, a few confirmations recommend that a superior method to see this peptide is as a modulator of the homeostasis of the safe framework.

VIP applies its assorted natural activities through a pathway started by explicitly restricting to cell surface receptors. Blended and emitted in the microenvironment of the lymphoid organs, can manage, in an autocrine/paracrine way, normal and gained insusceptibility influencing lymphocyte bond. Adherence of lymphocytes to the microvascular endothelium addresses the underlying advance in the elicitation of these cells to locales of irritation or potentially safe reaction. Numerous different illnesses show a connection with the presence of VIP. That is the situation of multi hormonal tumors like testicular carcinoid, neuroendocrine carcinoma of the skin, bosom disease, carcinoma of the vulva, or acinic cell carcinomas of the salivary organ where numerous VIP-positive cells have been portrayed other than other neuropeptides.

Even though VIP is identified with the improvement of numerous fundamental sicknesses, there are numerous others, where the ramifications of VIP are another proof of the interrelation that exists between the neuroendocrine and the safe frameworks.

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