4 - Veterinary Anatomy

PO-051 - (23821) - A PROSPECTIVE INTERVENTION OF PHEROMONE DETECTION IN VOMERONASAL ORGAN OF MICE WITH EXPERIMENTAL AUTOIMMUNE ENCEPHALOMYELITIS

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Experimental autoimmune encephalomyelitis (EAE) is a neurodegenerative disease, an animal model of multiple sclerosis, and characterized by central nervous system (CNS) inflammation. Although studies of EAE have been conducted for the CNS tissues and main olfactory system, little is known about the accessory olfactory system. Therefore, we evaluated whether an inflammatory response occurs in the vomeronasal organ (VNO) after EAE induction.
EAE induced by the mixed solution containing 1 mg/mL myelin oligodendrocyte glycoprotein (MOG)35–55 peptide, Freund's complete adjuvant, 5 mg/mL Mycobacterium tuberculosis H37Ra, and 500 ng pertussis toxin. The decalcified VNO tissues were immunohistochemically evaluated for various markers, including ionized calcium binding adaptor molecule 1 (Iba1), myeloperoxidase (MPO), and olfactory marker protein (OMP).
Inflammatory cells, both Iba1-positive macrophages and MPO-positive neutrophils, were infiltrated the VNO of EAE. On the other hands, the intensity of the OMP-positive immunoreaction was decreased in the vomeronasal sensory epithelium. Furthermore, increased mucus secretion and glycogen accumulation were confirmed in the EAE-induced mice, compared those of normal control.

We postulate that the inflammatory response of the VNO in EAE is associated with dysfunction of the accessory olfactory system. Collectively, in mice with EAE, vomeronasalitis occurs in the VNO leading to problems with olfaction and social communication.

Palavras-chave : experimental autoimmune encephalomyelitis, vomeronasal organ