IJAE
Vol. 118, n. 2 (Supplement): 157, 2013
ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

Inflammatory profile of neurotrophins, IL-6, IL1-β, TNF-α, VEGF, ICAM-1 and TGF-β in the Human Waldeyer's ring

E. Pompili[1], E. Bianchi[2], S. Taurone[2], P.P. Parnigotto[3], M. Artico[2], G. Magliulo[2], R. Di Liddo[3] and L. Fumagalli[1]

[1] Department of Anatomy, Histology, Forensic Medicine and Orthopedics - "La Sapienza" University of Rome, Rome, Italy
[2] Department of Sensory Organs - "La Sapienza" University of Rome, Rome, Italy
[3] Department of Pharmaceutical and Pharmacological Sciences- University of Padua, Padua, Italy

The palatine tonsils, nasopharyngeal tonsil (adenoid) and lingual tonsil constitute the major part of Waldeyer's ring, with the tubal tonsils and lateral pharyngeal bands as less prominent components. The lymphoid tissue of Waldeyer's ring is located at the gateway of the respiratory and alimentary tract and belongs to the mucosa-associated lymphoid tissue (MALT). The lymphatic tissue is known to interact with the nervous system and several organs implicated in the host response to a wide range of stressors (Otten et al., 1995; Kaneko et al., 2012; Ogasawara et al., 2011). This study focusses on the expression of some neurotrophins (NTs), their high- and low-affinity receptors in human adenoid tissues, lingual and palatine tonsils via immunohistochemical analysis, as well as on the expression of some inflammatory cytokines and other tissue growth factors (IL-6, IL1-β, TNF-α, VEGF, ICAM-1 and TGF-β)). Light microscopy immunohistochemistry performed on human samples showed to be generally positive for all the NTs investigated (NGF, BDNF, NT-3) and their receptors (TrKA, TrKB and TrKC) as well as the other cytokines and growth factors studied with some different expression levels. Real time PCR analysis is in progress to quantitate these data. Our data corroborate previous studies, suggesting that neurotrophins and inflammatory cytokines may mediate functional signals in lymphoid aggregates (Yusuf-Makagiansar et al., 2002; Ruoco et al., 1990).

References

[1] Otten et al. (1995) Int J Dev Neurosci 13: 147-151.
[2] Kaneko et al. (2012) J Clin Exp Hematop 52: 179-84.
[3] Ogasawara et al. (2011) Acta Otolaryngol 131: 116-23.
[4] Yusuf-Makagiansar et al. (2002) Med Res Rev 22: 146-167.
[5] Ruoco et al. (1990) Histopathology 17: 291-9.

Key words
Lingual tonsil, palatine tonsils, adenoid tissue, neurotrophins, immunohistochemistry, receptors, TNF-α, VEGF, ICAM-1, TGF-β, IL-6, IL-1β.