

## Heat shock proteins levels and expression in chronic obstructive pulmonary disease and vernal keratoconjunctivitis

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Inflammatory response in different organs share many similarities, but site-specific signs. Symptoms can be related to mucosal structure changes. The aim of the study was to compare heat shock proteins (HSPs) levels and expression in chronic obstructive pulmonary disease (COPD) to other inflammatory status of mucosa, such as vernal keratoconjunctivitis (VKC), a recurrent ocular inflammatory disease in which autoimmune aggression may have a pathogenetic role.

We examined bronchial mucosal biopsies from COPD patients (moderate to severe stage) and conjunctival biopsies from VKC patients; age-matched controls were selected for each group. We evaluated levels (by immunohistochemistry) and expression (by RT-PCR) of a panel of HSPs, among which Hsp10, Hsp27, Hsp40, Hsp60, Hsp70, Hsp90, and of the main heat shock transcription factor (both HSF-1 and pHSF-1).

Hsp10 levels and expression increased in all pathological conditions, Hsp27 in VKC, Hsp40 in COPD and VKC, Hsp60 in COPD, Hsp70 and Hsp90 in VKC, as compared to their appropriate controls. Transcription factor pHSF-1 positive cells were significantly increased in COPD compared to controls, while was unaltered in VKC. Moreover, all pathological tissues showed increased levels of macrophages (CD68 positive) in lamina propria, COPD showed increased levels of neutrophils (elastase positive) and VKC increased levels of eosinophils (EG2 positive). Finally, Hsp60 colocalize with elastase positive cells in COPD.

These results indicate that HSPs levels and expression change during development of different types of inflammation. Further studies will prove their active involvement and functions in triggering and/or maintaining the inflammatory status.