Publication

Assessment of the impact of sex in intensity, skin flares and central processing of histaminergic itch-A pilot study

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Itch is the commonest skin-related symptom, and sex differences are increasingly recognised as important determinants in stratified medicine, but only little is known about sex differences in itch. Questionnaire-based studies indicated that women perceive itch as more intensive and bothersome in comparison with men. However, data of studies using standardised itch models to objectify sex differences are scarce and inconsistent. To determine sex differences in intensity, skin flares and central processing of histaminergic itch, we compared 15 female and 15 male healthy subjects in a double-blinded, within-subject, placebo-controlled study using a histamine skin prick itch model (histamine 1% applied onto the volar forearm) and functional MRI. We found trends in higher mean itch intensity (0.58ăVAS, CI 95% 0.004-1.19, Pă=ă.056) and maximum itch intensity (men 3.93ăVASăśă0.39ăSD at 3ăminutes, women 4.73ăVASăśă0.31ăSD at 4ăminutes, Pă=ă.073) in women paralleled by a trend in a stronger positive correlation between itch intensity and blood oxygen level-dependent (BOLD) activity in brain structures identified during itch in comparison with men (r; s; in women: .46, Pă=ă.08, r; s; in men: .07, Pă=ă.79). The erythema and wheal following histamine skin pricking were (non-significantly) larger in men, indicating that higher mean itch intensities on the right volar forearm in women may not be explained by more intense flares. The comparison of the activation patterns between the sexes revealed increased activity in men compared to women in the left middle temporal gyrus (temporooccipital part)/lateral occipital cortex. Thus, our findings indicate that histaminergic itch perception and central itch processing differ between the sexes under standardised conditions.
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