
Non-pharmacological Methods of Histamine Evoked Itch Reduction Focusing on the Pleasant Touch Pathway.

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Abstract

Itch is commonly experienced in skin diseases such as eczema. Currently, treatments such as anti-histamines work primarily for acute itch which is associated with allergic response. Treatments for chronic itch, namely topical corticosteroid medications, provide some relief but also result in side-effects such as skin thinning and in certain cases, topical corticosteroid withdrawal. Previous research indicates a relationship between itch, pain and pleasant touch (slow, stroking gentle touch signalled by C-tactile afferents) where pain has been shown to reduce itch and pleasant touch reduces pain. The overlap between these somatosensory modalities highlights a possible relationship between itch and pleasant touch. The study investigates whether pleasant touch relieves histamine evoked itch. Itch was induced via histamine iontophoresis on 58 participants on the dorsal side of both forearms and the wrist. Participants were then brushed at 3cm/s (condition 1; affective touch), 18-30cm/s (condition 2; non-affective touch) and had brush tapping at 1Hz (condition 3; active control) in a pseudorandomised manner for a total of 18 trials per condition across three blocks. Participants were asked to rate the itch severity and brushing pleasantness after each trial. Individual variations in touch and bodily awareness were also investigated. Affective 3cm/s ($p < .001$) brushing significantly reduced itch severity compared to non-affective 18-30cm/s brushing ($p < .001$) and brush tapping ($p < .001$). Individual differences did not correlate with itch ratings. These results suggest that pleasant touch has a relieving effect on histamine induced itch and provides impetus for further exploration as a mechanism for non-pharmacological intervention for itch.

Keywords: itch, pleasant touch, histamine, iontophoresis

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