
These research projects, undertaken in partial fulfillment of the requirements for the MD degree at Sackler Faculty of Medicine, Tel Aviv University in 2014–15, were considered the most outstanding of the graduating class

Prevention of pruritus with ethyl-chloride in the skin prick test: a double-blind placebo-controlled prospective study

A. Gal-Oz^{1,2}, S. Kivity², Y. Shacham², E. Fiszer², O. Rogovsky³ and G. Chernin¹

Departments of ¹Nephrology, ²Allergy and ³Internal Medicine G, Tel Aviv Sourasky Medical Center, affiliated with Sackler Faculty of Medicine, Tel Aviv University, Israel [elishou@gmail.com]

Background: Ethyl chloride (EC) cooling spray is used as a topical anesthetic spray agent. It was recently shown to significantly reduce pruritus triggered by a histamine skin prick test (SPT) when administered 15 minutes after completion of the test, without having an effect on the local skin reaction (wheal-and-flare) when compared to a placebo. Its effect on pruritus and the wheal-and-flare reaction when administered before the prick test has not been previously studied.

Objectives: To assess the effect of EC on the wheal-and-flare reaction and pruritus compared to a placebo, when sprayed immediately before a histamine skin prick test.

Methods: In this prospective randomized placebo-controlled double-blind study 44 healthy volunteers were treated with an EC spray on one arm and a saline spray (placebo) on the other, followed immediately by a SPT with different concentrations of histamine to induce pruritus and the wheal-and-flare reaction. The wheal-and-flare reaction was measured 15 minutes after the prick test and subjects reported the intensity of pruritus

on both arms using a validated questionnaire (indexes 1, 2 and 3) and a visual analog scale (VAS).

Results: Significant amelioration of pruritus was reported more frequently following treatment with EC compared with placebo for all four studied parameters (index 1, 2 and 3, and VAS; $P = 0.007, 0.002, 0.03$ and 0.026 , respectively). There were no significant differences between EC and placebo in terms of the wheal-and-flare induration areas for all histamine concentrations (2.5 mg/ml, 5 mg/ml, 10 mg/ml; $P = 0.2, 0.8$ and 0.6 , respectively).

Conclusions: Prior to a histamine prick test, EC can be administered as an effective analgesic and anti-pruritic agent in order to reduce the discomfort associated with this test, without masking its results.

The research projects not presented here but already published are:

Disturbed B and T cell homeostasis and neogenesis in patients with ataxia telangiectasia

M. Kraus, A. Lev, A.J. Simon, I. Levran, A. Nissenkorn, Y.B. Levi, Y. Berkun, O. Efrati, N. Amariglio, G. Rechavi and R. Somech. *J Clin Immunol* 2014; 34 (5): 561-72. doi: 10.1007/s10875-014-0044-1. [Epub ahead of print]

Mitochondrial induction as a potential radio-sensitizer in lung cancer cells – a short report

R. Shavit, M. Ilouze, T. Feinberg, Y.R. Lawrence, Y. Tzur and N. Peled. *Cell Oncol* 2015; 38 (3): 247-52. [Epub ahead of print]