17789

An antioxidant cocktail—containing cosmetic product (Liftactive Cure) prevents air pollution—induced skin hyperpigmentation: Results from the ex vivo Düsseldorf Pollution Skin Test

Jean Krutmann, MD, IUF-Leibniz Research Institute for Environmental Medicine; Susanne Grether-Beck, PhD, Audrey Valois, Heidemarie Brenden, Ingo Uthe, Ingo Felsner, Leibniz-Institut für umweltmedizinische Forschung (IUF); Heidemarie Brenden, BTA, IUF—Leibniz-Institut für umwelt-medizinische Forschung gGmbH; Delphine Kerob, Vichy Laboratoires

Epidemiologic studies have shown that exposure to traffic-related air pollutants including particulate matter and soot is associated with signs of extrinsic skin aging such as facial pigment spots and wrinkles. In order to study the underlying mechanisms we have developed a standardized, robust ex vivo human skin model which allows application of ambient relevant, toxicologically well characterized, traffic-related diesel exhaust particles (DEP) onto the surface of human skin. By employing this model we previously discovered that topical exposure of human skin to DEP at environmentally relevant nontoxic concentrations increased skin pigmentation. This increase was visible by the bold eye, dose- and time-dependent and associated with increased melanin synthesis. Accordingly, in DEP-treated skin, i) total melanin content and ii) the number of melanin-positive cells (Fontana-Masson) were significantly increased. This was accompanied by an increased transcriptional expression of genes involved in melanin synthesis, but also of genes related to wrinkle formation such as MMP-1. We also found that DEP-induced skin hyperpigmentation was mediated at least in part by oxidative stress. In line with this assumption we here report that a cosmetic preparation containing vitamins C and E, neohesperidine and maritime pine polyphenols as active ingredients (Liftactive Cure) significantly reduced DEP-induced skin pigmentation and gene expression including MMP-1. These studies emphasize that a cosmetic product containing an appropriate cocktail of antioxidants is effective in protecting human skin against air pollution—induced skin pigmentation/aging.

Commercial disclosure: This study was financially supported by Vichy International.

17790

M89, a dermocosmetic combining 89% Vichy mineralizing water and hyaluronic acid, does not modify ex vivo the cutaneous penetration of topical ivermectin

Jerry Tan, Private Practice; Emilie Raynaud, Noémie Merle, Ingrid Durand, Sebastien Gregoire, Laurène Roussel, PharmD, PhD, L'Oréal R&I; Delphine Kerob, Vichy Laboratoires

Background: M89 containing 89% Vichy mineralizing water and hyaluronic acid, has been developed to reinforce the skin barrier, especially in patients with rosacea. A standard treatment for papules/pustules of rosacea is topical ivermectin 10 mg/g cream.

Objective: to assess the skin absorption and distribution of ivermectine applied before or after M89 application.

Methods: The study was conducted using full thickness human skin mounted on Franz diffusion cells over a 24-hour period (application area = 2 cm^2) following 3 conditions: a) topical Ivermectin 1% alone (5 mg/cm^2), b) before application of M89 (5 mg/cm^2), or c) after application of M89 (5 mg/cm^2). Each condition was tested on 2 replicates for 3 different skin donors. At the end of the 24-hour exposure period, amount of ivermectin was quantified in the washing fluid of the application site, stratum corneum (isolated by tape-stripping), total skin and receptor fluid. Samples were analyzed using an HPLC method with MS/MS detection.

Results: Ivermectin was not detected in the receptor fluid (LOD 1.5 ng/mL) and located mainly in the stratum corneum. Mean ivermectin amount in the stratum corneum, skin and receptor fluid was 2.22 μg/cm^2 (representing 4.15% of the applied dose for condition a, 2.41 μg/cm^2 (4.54%) for condition b, 2.49 μg /cm^2 4.83% 4.83%) for condition c.

Conclusions: Cutaneous absorption of ivermectin was not modified by the application of M89.

Commercial disclosure: This poster was sponsored by Laboratoire Vichy, France.

17793

Bathing practices in atopic dermatitis: A systematic review and meta-analysis

Tammy Hua, BA, Muhammad Yousaf, BA, DDepartment of Dermatology, Feinberg School of Medicine, Northwestern University, Chicago, Illinois; Eran C. Gwillim, MD, Northwestern University; Yik Weng Yew, MBBS, MPh, National Skin Centre; Brad Lee, BS, Northwestern University Feinberg School of Medicine; Kevin Hua, BA, Kansas City University of Medicine and Biosciences; Taylor Erickson, BS, Northwestern University Feinberg School of Medicine; Brian T. Cheng, BA, Feinberg School of Medicine, Department of Dermatology, Northwestern University; Jonathan I. Silverberg, MD, PhD, MPH, George Washington University School of Medicine and Health Sciences

Background: Many water-bathing regimens have been proposed for reducing atopic dermatitis (AD) severity. However, conflicting results were found regarding their efficacy.

Objective: To determine the efficacy of different water bathing practices at improving AD severity.

Methods: We performed a systematic review and meta-analysis of all studies evaluating the clinical efficacy of bathing regimen in AD. Medline, Embase, Scopus, Lilacs, Cochrane, China National Knowledge Infrastructure, Taiwan Electronic Periodical Services, and CiNii were searched. At least 2 authors independently performed title/abstract review and data extraction.

Results: Ten studies were included in the review, with body surface area (BSA; n = 3), Scoring AD (SCORAD; n = 4), or Eczema Area and Severity Index (EASI; n = 4) as the end points; all were prospective. Eight studies demonstrated numerically reduced AD severity in patients treated with any water bathing regimen in ≥1 time point. In pooled multivariable random-effects regression models adjusting for use of emollients and/or topical corticosteroids (TCS), daily baths were associated with significantly lower Cohen D scores for EASI vs baths ≤2 times per week ($P = .02$; $I^2 = 91.8$), but no significant differences of SCORAD ($P \geq .61$; $I^2 = 90.7$). There was inconsistent use of emollients and TCS across studies, and only one study examined their application immediately after bathing.

Conclusions: Daily water baths reduced some measures of AD severity more than did bathing ≤2 times per week. Future, larger-scale, well designed RCTs are needed to confirm these findings and determine the efficacy of applying different emollient and/or prescription therapies after bathing.

Commercial disclosure: None identified.

17800

Open-label extension study evaluating the long-term safety, efficacy, and tolerability of FMX103 1.5% topical minocycline foam in the treatment of moderate to severe facial papulopustular rosacea

Linda Stein Gold, MD, Henry Ford Health System; James Q. Del Rosso, Leon Kircik, MD, Icahn School of Medicine at Mount Sinai, New York; Neal Bhatia, MD, Therapeutics Clinical Research; Deirdre Hooper, Walter K. Nahm, MD, PhD, School of Medicine, University of California, San Diego; Iain Stuart

Objective: To assess the long-term safety, efficacy, and tolerability of FMX103 1.5% in moderate to severe facial papulopustular rosacea.

Methods: Eligible subjects were enrolled in a 40-week open-label extension (OLE) study at the final study visit of 2 identical phase 3, randomized, double-blind, vehicle-controlled, 12-week studies. Subjects initially enrolled in the FMX103 group continued to receive active treatment, while those previously in the vehicle group crossed over to receive active treatment in the OLE. Safety and efficacy and tolerability were assessed over 40 weeks.

Results: Of the 504 subjects enrolled, 81.3% of subjects completed the OLE. The majority of TEAEs were mild to moderate in severity (overall 94.0%). Except for one case of severe pruritus (probably related), all severe TEAEs and all serious adverse events were considered to be unrelated to the study treatment. At week 40, most subjects from both groups reported no symptoms or only mild symptoms of burning/stinging (100%), flushing/blushing (94.5%), dryness/xerosis (98.5%), itching (99.5%), peeling/desquamation (99.0%), or hyperpigmentation (99.3%). Overall, the mean reduction from baseline in absolute inflammatory lesion count, and the percent change at week 40 was 22.8 and 82.3%, respectively. The IGA treatment success rate from baseline of the double-blind study to week 40 was 79.8%.

Conclusions: FMX103 1.5% demonstrated efficacy in the treatment of moderate to severe facial papulopustular rosacea and appeared to be safe and well tolerated for up to an additional 40 weeks of treatment.

Commercial disclosure: This study was funded by Foamix Pharmaceuticals.