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Kilian Eyerich

**Ralf Ludwig** 

Rüdiger Eming

**Evelyn Gaffal** 

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of poor solubility of eumelanin in alkali solution this method may lack the changes in eumelanin content but detect only the increased amount of pheomelanin. To include the eumelanin in the analytic approach, alkaline hydrogen peroxide oxidation was performed and degraded products were separated by HPLC.

In addition, the impact of cold atmospheric plasma on morphology and viability was minor. The pattern of melanosomal distribution remained similar. In the least pigmented SK-Mel-28 cells MiTF expression doubled after plasma treatment. In the other tested cell lines, plasma exposure revealed only minor effects on the expression of MiTF in our experimental setup.

Modulation of melanin by cold plasma can be a useful tool. However, further investigations are required to elucidate the underlying signaling cascade.

## P234 | Measurement properties of patientreported outcome measures (PROMs) for women with Genitourinary Syndrome of Menopause: a systematic review

M. Gabes<sup>1</sup>; H. Knüttel<sup>2</sup>; C. Prinsen<sup>3</sup>; C. J. Apfelbacher<sup>1</sup>

<sup>1</sup>University of Regensburg, Medical Sociology, Institute of Epidemiology and Preventive Medicine, 93051 Regensburg, Germany; <sup>2</sup>University of Regensburg, University Library, 93053 Regensburg, Germany; <sup>3</sup>Amsterdam Public Health research institute, Amsterdam UMC, location VUmc, Department of Epidemiology and Biostatistics, Amsterdam, the Netherlands

Background: Genitourinary Syndrome of Menopause (GSM) is a chronic and usually progressive skin disease which affects up to 50% of postmenopausal women. Symptoms, such as vaginal dryness, itching and burning have negative impacts on the women's sexual activity and often come along with urinary problems. Furthermore, these consequences influence the women's quality of life (QoL). Patient-reported outcome measures can be used to measure the impact of GSM.

**Objectives**: We aimed to identify all existing PROMs that were developed and/or validated for measuring patient-reported outcomes in women with GSM or vulvovaginal symptoms during menopause and assess the quality of these PROMs in a transparent and structured way.

Methods: We performed a systematic literature search in MEDLINE, EMBASE, Web of Science and smaller data bases, and hand-searched reference lists of included studies. Only studies in English, German, French or Italian aiming at the evaluation of measurement properties, the development of a PROM, or the evaluation of the interpretability of the PROMs of interest were eligible. The methodological quality of eligible studies was evaluated with the COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) risk of bias checklist. Quality criteria for good measurement properties were applied and the quality of evidence was graded using a GRADE approach. Information on interpretability and feasibility was extracted as well. PROMs were then categorized into

three categories. PROMs of category A had evidence for sufficient content validity and at least low quality evidence for sufficient internal consistency, PROMs of category C had high-quality evidence for an insufficient measurement property, and PROMs of category B could not be categorized in A or C.

Results: Eight studies, two of which were found by reference list screening, were included. These studies reported on four PROMs. All of the included PROMs showed sufficient content validity. Two of the PROMs, the Vaginal Symptoms Questionnaire (VSQ) and the Day-to-Day Impact of Vaginal Aging (DIVA) showed moderate-to-high quality of evidence for sufficient structural validity and internal consistency, and were categorized as A. They can be therefore recommended for future use. The UGAQoL still has the opportunity to be recommended for use, but further validation is needed. The overall rating was often indeterminate since structural validity or important reliability parameters were not reported. The Urogenital symptom scale cannot be recommended for use since there was high quality of evidence for insufficient structural validity and internal consistency.

Conclusion: Currently, two PROMs for women with GSM or vulvovaginal symptoms can be recommended. Nevertheless, those PROMs do not cover the urinary component of GSM. Future validation research should try to confirm and extend the measurement properties of those PROMs to strengthen this recommendation. PROSPERO registration CRD42018092384.

## P235 | Evaluation of responsiveness and estimation of smallest detectable change (SDC) and minimal important change (MIC) scores for the Childhood Atopic Dermatitis Impact Scale

M. Gabes<sup>1</sup>; S. L. Chamlin<sup>2</sup>; J. Lai<sup>3</sup>; D. Cella<sup>3</sup>; A. J. Mancini<sup>2</sup>; C. J. Apfelbacher<sup>1</sup>

<sup>1</sup>University of Regensburg, Medical Sociology, Institute of Epidemiology and Preventive Medicine, 93051 Regensburg, Germany; <sup>2</sup>Ann and Robert H. Lurie Children's Hospital of Chicago and Northwestern Feinberg School of Medicine, Chicago, USA; <sup>3</sup>Feinberg School of Medicine, Northwestern University, Department of Medical Social Sciences, Chicago, USA

Background: The Childhood Atopic Dermatitis Impact Scale (CADIS) is an instrument to measure quality of life (QoL) in young children affected by atopic dermatitis (AD) and their parents. It consists of five domains, "Symptoms", "Activity Limitations and Behaviour", "Family and Social Function", "Sleep", and "Emotions".

**Objectives:** We aimed to evaluate the responsiveness (sensitivity to change in those whose condition had changed), smallest detectable change (SDC) and minimal important change (MIC) for the CADIS total score and each domain separately.

**Methods**: Parents and primary caregivers of 300 young children completed the CADIS and a global rating of their child's skin condition at baseline and four-week follow-up. Kruskal-Wallis-tests, Wilcoxontests and effect sizes were used to assess responsiveness. The SDC