Anida-Maria Babtan graduated “Iuliu Hațieganu” University of Medicine and Pharmacy, Cluj-Napoca, Faculty of Dentistry in 2014. After her training at Oro-maxillofacial Hospital Department in Cluj-Napoca and final exam, she is a senior doctor in Oral Surgery. In present, she works as an Assistant Proffessor at Oral Rehabilitation, Oral health and Management Department, UMPh “Iuliu Hațieganu”. Dr. Babtan is an active member of ERANET Project - Biomarkers for Nutrition and Health – “Innovative technological approaches for validation of salivary AGEs as novel biomarkers in evaluation of risk factors in diet-related diseases”, and, as a PhD student in third year, she studies the implication of diet-derived glycation products in oral pathology, and their correlation with metabolic syndrome.

ADVANCED GLYCATION END PRODUCTS (AGEs) ULTRASOUND EVALUATION IN FACIAL SKIN AND MUCOSA

Anida-Maria Babtan, Aranka Ilea, Nausica Petrescu, Bianca Bosca, Maria Crișan, Manuela Lenghel, Anca Ionel, Andreea Pop, Willi Uriciuc, Codruta Mirica, Claudia Feurdean, Radu Septimiu Campian

1Department of Oral Rehabilitation, Oral Health and Dental Office Management, Faculty of Dentistry, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Romania
2Department of Histology, Faculty of Medicine, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Cluj-Napoca, Romania
3Department of Radiology, Faculty of Medicine, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, Cluj-Napoca, Romania

Introduction: Chronic subclinical inflammation can be induced Advanced Glycation End Products (AGEs). These proteins can be evaluated in skin and mucosa using ultrasonic techniques, due to tissue’s hypersignal. The present study assessed AGEs in zygomatic area skin and lower lip mucosa using two ultrasounds devices.

Material and methods: The study was conducted on a group of 20 subjects. Skin phototype was recorded. A L64 linear array transducer (18-MHz) (Arietta, Hitachi, Ltd. 2013, 2017, Q1E-EZ1295) and a linear B-Scan mode applicator (38 MHz) (DUB SkinScanner Taberna pro medicum, ScanLoop 2000) were used. The linear transducer was positioned at the level of the zygomatic area and lower lip mucosa. The following skin structures were evidenced: epidermis, subepidermal band (papillary dermis), dermal band (reticular dermis), hypodermis, elasticity and density. Ultrasound investigation images were exported to process soft and quantitative measurements were performed.

Results: AGEs hypersignal was analyzed in skin and inferior lip mucosa. Results were compared with skin phototype and patient’s age. The dermis is the main skin component for AGEs accumulation. AGEs were found higher in zygomatic area compared to oral mucosa. Subject with IV skin phototype had lower AGEs concentration compared with II either III skin phototype. In elders AGEs were more expressed compared to youngers. Sun-exposed skin was thinner compared to oral mucosa, revealing elastosis.

Conclusions: The AGEs accumulation are influenced metabolic syndrome, age and sun-exposure. Ultrasonic assessment is non-invasive, easy handling, allows multiple measurement, with accurate and reproducible results.

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