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Buccal micronucleus cytome assay in Armenian diabetes patients

G. Parsadanyan^{1*}, E. Aghajanova^{1,2}, G. Zalinyan³,
R. Markosyan^{1,2}, A. Sahakyan⁴, A. Nersesyan⁵

¹Yerevan State Medical University, Yerevan, Armenia

²Center of Endocrinology "Muratsan" MC, Yerevan, Armenia

³Yerevan State University, Yerevan, Armenia

⁴Medline Clinic MC, Yerevan, Armenia

⁵Center for Cancer Research, Medical University of Vienna, Vienna, Austria

*gohar@parsadanyan.am

Diabetes mellitus (DM) is associated with a risk of serious health complications. An increased frequency of micronuclei (MN) was reported in DM patients (both in lymphocytes and exfoliated buccal cells).

It would be of interest to study MN and other nuclear anomalies in buccal cells of Armenian DM patients because of extremely high homogeneity of population (98.1%). It is notable that the prevalence of DM (both types in population of Armenia is between 5.6% and 8.5%

In our pilot study buccal cells of DM patients (type 1 and type 2; n=25/group) as well as healthy persons (control) were evaluated for MN and other nuclear anomalies. Several patients with latent autoimmune diabetes in adults (LADA) also were included in MN evaluation (we could not find publications on this topic in literature). The buccal MN cytome assay was applied for analysis. Several blood parameters were also monitored including the most important, HbA1c levels.

We found significantly increased frequencies of MN in DM type 1 and 2 patients as well as in LADA patients compared with controls. The mean ratio (MN in patients/ MN in controls) was 3.8, 2.5 and 2.3 respectively. The frequencies of all other nuclear anomalies also were significantly higher in all patients compared with the controls. Hence, our preliminary data show increased levels of MN and other nuclear anomalies in DM and LADA patients. Gender and age did not influence levels of MN and other nuclear anomalies in buccal cells.

Keywords:

Micronucleus; Nuclear anomalies; Buccal mucosa; Diabetes mellitus.