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Comparing the impact of SGLT2 inhibitors and GLP-1 agonists on lipid profile among the patients with type 2 diabetes

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Statement of the abstract

In Georgia, significantly huge number of patients with Diabetes Mellitus Type 2 (DMT2) suffer from cardiovascular diseases (CVD) and obesity. Since, dyslipidemia is one of major factors leading to CV-mortality, it is crucial to investigate the effects of relatively novel hypoglycemic agents- sodium glucose cotransporter 2 (SGLT2) (Dapagliflozin) or glucagon like peptide 1 (GLP-1) agonists (Liraglutide) on lipid profile. The aim of our observational study was to assess the benefits of these two medications among the patients with DMT2 and dyslipidemia.

Methodology

A total of 68 persons with T2DM, (mean age 51,8 ±6,1. mean duration of diabetes ±10,3 yrs) were recruited in the study. All of them were treated with GLP1 agonists or SGLT2 inhibitors,(35 patient with SGLT2 inhibitors, 33 patients with GLP1 agonists) as add on therapy to Metformin. We paid serious attention to dietary recommendations and physical activity in all patients. We compared the effects of GLP-1 agonists and SGLT2 inhibitors on lipid profile at baseline and after 18 weeks. Anova test was used to see the differences in groups.

Results

62 patients completed the follow-up. After 18 weeks of the treatment, the study showed the upward trend of Total cholesterol(CH), HDL-Cholesterol (HDL-CH) and LDL-cholesterol (LDL-CH) among patients treated with SGLT2 inhibitors - Median LDL-CH +0.2mmol/l, Median total CH +0.2 mmol/l and Median HDL-CH +0.3mmol/l.

Median LDL-CH was reduced (-0.2mmol/l) among the patients, treated with GLP-1 agonists. However, there was no significant effect shown on HDL-CH or total Cholesterol.

Mean levels of Triglycerides (TG) remained unchanged in the both groups.

Findings: We think that different impacts of hypoglycemic medications on lipid profile seen in our patients should be taken in concern and outlined. The SGLT-2 inhibitor was associated with increase of both- HDL-CH and LDL-CH, while GLP-1 agonists with

reduction of LDL-CH. However these are short-term observational study results, we do hope to investigate accurately the whole lipid profile among our patients for the following months.

Recent Publications

1. N.Bostoganashvili,E.Giorgadze,M.Lomidze, Sh.Janjgava. (2017) **The effect of Growth Hormone replacement therapy on Lipid Metabolism in Georgian patients with Growth Hormone Deficiency.** European scientific Journal. #13 (27). 19-28
2. N.Bostoganashvili,T.Zerekidze,Sh.Janjgava,M. Lomidze. (2017) **The impact of 12- month growth hormone replacement therapy on lipid metabolism and adipose tissue distribution in Georgian patients with Adult growth hormone deficiency.** Georgian Medical News. #12(273).36-41
3. N.Bostoganashvili, E.Giorgadze, M.Lomidze, Sh.Janjgava. **Growth hormone Replacement therapy -Novel approach to management of Dyslipidemia Experimantel and Clinical Medicine #1, (2017), p. 36-40;**
4. S.Tukvadze, R. Kvanchakhadze,N. Bostoganashvili.(2009)Zinc deficiency in pubertal adolescents with Hypothyroidism. Annals of Nutrition and Metabolism. (55):555, P122-125
5. N. Bostoganashvili, R. Kvanchakhadze.(2013) **Peculiarities of adaptation period of neonate born to mothers with thyroid dysfunction.** Warsaw2013 congress Journal. P. 125-126

Biography

Nestan Bostoganashvili has finished Tbilisi State Medical University in Tbilisi Georgia. She has worked as Intern on the basis on National Institute of Endocrinology, She has completed dissertation on "Growth hormone replacement therapy effect on the lipid profile in growth hormone deficient adults". She is the first author of several publications, since the first day of her practice; she is interested in different fields of Endocrinology: Diabetes Mellitus, Pituitary-hypothalamic axis, obesity. She is the member of National Nutritionists association. She is assistant professor in different Universities of Georgia.

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