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## Scientific Tracks & Abstracts

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## Determinants of diabetic retinopathy in Tikur Anbessa Hospital, Ethiopia: a case-control study

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### Background:

Diabetic retinopathy is the most frequent complication of Diabetes Mellitus and remains the leading cause of preventable blindness. However, there are limited studies on the determinants of diabetic retinopathy in the study area as well in Ethiopia. Hence, this study aimed to assess the determinants of diabetic retinopathy among diabetic patients at Tikur Anbessa Hospital.

### Methods:

An institution-based unmatched case-control study design was conducted at Tikur Anbessa Hospital from May 11 to June 26, 2020. Diabetic patients who developed retinopathy within 2 years were cases in the study. Patients who were free of retinopathy were controls in this study. Data were collected using a pretested interviewer administered questionnaire, Topcon retinal examination, and a record review. The collected data were entered into Epi Data version 3.1 software, and analyzed using SPSS version 25. Binary logistic regression analysis was used to assess the determinants of diabetic retinopathy.

### Results:

A total of 282 patients (142 cases and 140 controls) were included in the study. The mean age ( $\pm$  Standard deviation) for the cases and the controls were 50.6 (SD:  $\pm$  18.7) and 44.9 (SD:  $\pm$  17.65) respectively. Patients who had a glucometer at home (AOR = 0.048; 95% CI: 0.005–0.492), exercise adherence (AOR = 0.075; 95% CI: 0.007–0.84), diabetes duration < 5 years (AOR = 0.005; 95% CI: 0.00–0.10) and 5–10 years (AOR = 0.041; 95% CI: 0.003–0.57), health information on diabetic complications (AOR = 0.002; 95% CI: 0.00–0.042) and appointments every month (AOR = 0.004; 95% CI: 0.00–0.073) and every 3 months (AOR = 0.022; 95% CI: 0.002–0.23) were less likely to develop diabetic retinopathy. Participants who had poor glycemic control (AOR = 19.9; 95% CI: 2.34–168.69), systolic hypertension (AOR = 23.4; 95% CI: 2.56–215.36) and nephropathy (AOR = 17.85; 95% CI: 2.01–158.1), had a higher risk of developing diabetic retinopathy.

### Conclusions:

Patients who had a glucometer at home, exercise adherence, diabetes duration < 10 years, health information on diabetic complications, and frequent follow-up had a preventive role. However, poor glycemic control, systolic hypertension, and nephropathy increase the risk of diabetic retinopathy. A concerted effort should be made to improve the health status of patients with Diabetes Mellitus, with particular emphasis on lifestyle modification practices to prevent diabetic retinopathy.

**Keywords:** Diabetic retinopathy, Determinants, Case-control, Ethiopia

### Recent Publications

1. Seid K, Tesfaye T, Belay A, Mohammed H. Determinants of diabetic retinopathy in Tikur Anbessa Hospital, Ethiopia: a case-control study. *Clinical Diabetes and Endocrinology*. 2021 Dec; 7(1): 1-9.
2. Gube AA, Debalkie M, Seid K, Bisete K, Mengesha A, Zeynu A, Shimelis F, Gebremeskel F. Assessment of anti-TB drug nonadherence and associated factors among TB patients attending TB clinics in Arba Minch Governmental Health Institutions, Southern Ethiopia. *Tuberculosis research and treatment*. 2018 Feb 18; 2018.

### Biography

I am expertise in adult health nursing basically non-communicable diseases in sub-Saharan country, Ethiopia. I have different papers in review process concerning diabetes self-care practices and its association with COVID-19 in Ethiopia. I have built models for nursing practice in southwest Ethiopia after years of experience in research, evaluation, teaching and administration both in hospital and education institutions.

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## International diabetic foot management during COVID 19 pandemic

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New research being presented all over the world reveals healthcare professional efforts to maintain a diabetic foot care programme during the COVID-19 pandemic. All preventative medical activities, including foot clinics were suspended by governments in many countries. A big challenge have faced clinicians across the world in the management of complex diabetic foot problems.

In University Medical Centre, Slovenia, during the lockdown period, the total number of clinics visits dropped by 58%, also foot ulcer visits and emergency visits dropped by 42% and 34%, respectively [1]. In university of Tor Vergata , Italy , the healthcare professionals of Diabetic Foot Unit, adopted a new triage system driven both by ulcer's severity and concomitant co-diseases to offer an appropriate ulcer's management and reduce the risk of virus exposure, as described below.[3]

Also a lot of popular Towns like Paris, London, Los Angeles choose a new modes of patient consultation like telephone consultations and telemedicine using a video consultation. This clinical experience during the COVID-19 pandemic has demonstrated the need to maintain the art of clinical medicine in terms of careful examination and wound management. [2,4].

There is no doubt that the COVID-19 experience when handling diabetic foot problems will likely transform our approach to the management of diabetic foot disease especially in the areas of digital health and smart technology. Most important in the management of diabetic foot disease is to provide the appropriate

treatment to patients if possible while they are safely at home, but if not possible, to do so, where indicated, in outpatient facilities and hospital services for the most severely affected.

[1] Vilma Urbančič-Rovan. Diabetic Foot Care Before and During the COVID-19 Epidemic: What Really Matters? Feb. 2021,

<https://doi.org/10.2337/dc20-2650>.

[2] Andrew J. M. Boulton. Diabetic Foot Disease during the COVID-19 Pandemic. Jan. 2021, pp. 57, 97.,

<https://doi.org/10.3390/medicina57020097>.

[3] Marco Meloni \*, and , Valentina Izzo, Laura Giurato, Roberto Gandini, Luigi Uccioli. Management of Diabetic Persons with Foot Ulceration during COVID-19 Health Care Emergency: Effectiveness of a New Triage Pathway. June 2020, p. 7,

<https://doi.org/DOLhttps://doi.org/10.1016/j.diabres.2020.108245>.

[4] Laura Shin,1 Frank L. Bowling,2, et al. Saving the Diabetic Foot During the COVID-19 Pandemic: A Tale of Two Cities. Aug. 2020, pp. 1704–1709 |,

<https://doi.org/10.2337/dc20-1176>.

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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  $\pm$  6,1. mean duration of diabetes  $\pm$  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* Experimental 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.* Warsaw 2013 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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