

Title of the poster: Impact on health related quality of life by Empagliflozin as an add on Therapy with Metformin, Teneagliptin and Glimepride in type 2 diabetes patients with Hypertension: a prospective study

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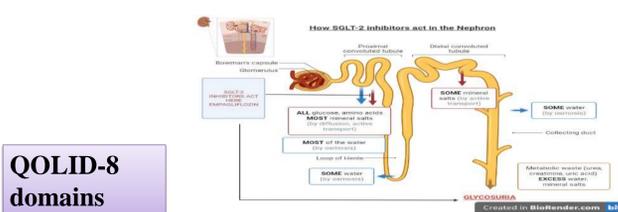
Abstract: Diabetes is a major source of quality of life mutilation globally. However, research are required in the north Indian area to offer a valuable assessment on the quality of life effect (QoL) of treatment modality on type 2 diabetes with hypertension. A prospective study was conducted on type 2 diabetes patients with hypertension who attended SKIMS Deemed university, endocrinology outpatient clinics. The total 200 type 2 diabetes patients with hypertension were recruited greater part were females. the patients were with mean age of 49.83 ± 9.36 years, married (96.5%), lower income (64%), rural (60.5%), primary education (37%), had history of diabetes for 5 years or less (59.5%), had family history of diabetes (76%). Empagliflozin as an add to therapy has shown significant improvement of roles limitation due to physical health, physical endurance, general health, symptom botherness, financial worries, emotional/mental health and diet satisfaction (****P < 0.0001). Statistically significant (*p<0.05) difference was found between QoL and smoking history, exercise, monthly income, age, BMI, educational status and duration of diabetes at the end of the study. Quality of life in diabetes modality therapy is an essential criterion. Empagliflozin as an add on therapy exerted favorable effects on QoL in T2DM patients with hypertension.

Introduction: WHO described quality of life as 'quality of life is defined as the perspective of persons of their place in life in the context of their culture and values system and in reference to their aims, ambitions, norms and worries. The measurement of quality of life has proven to be an essential outcome indicator for the management of chronic diseases. In this regard a broad range of methods were validated and assessed in a range of demographic contexts for generic [1] and diseases specific [2-7] quality of life assessments. We conducted this study to assess the impact of the therapeutic modality in Indian patients before and after treatment with the use of urdu translated (QOLID) questionnaire on quality of life in Indian diabetes in the absence of a complete and validated questionnaire based on a treatment modality for diabetes with hypertension as a quality of life.

This study was therefore designed to assess the impact of Empagliflozin on the quality of life instrument of north Indian diabetes patients on Metformin, Teneagliptin and Glimepride as an add-on therapy for Type 2 Diabetes with hypertension.

Material and methods: The one year prospective, observational study (open label) was conducted in SKIMS deemed university, a tertiary care hospital in Srinagar, North India to report quality of life in Type-2 DM patients with hypertension. The patients were recruited in October 2020 and study was compiled in October 2021. The research was approved by IEC/SKIMS Protocol number **RP 29/2020 (SIMS 1131/IEC-SKIMS/2020-591)** Committee on Institutional Ethics.

Study procedure: In addition to clinical data such as duration of diabetes, the details of socio-demographics such as age, sex, education level, exercise history and marital status were acquired via a manually created pro forma patient or case report. QOLID was used to evaluate the Quality of life of the baseline and follow-up to this study participants for patients of north Indian diabetes patients, this comprises a group of 34 items covering eight domains [8].



QOLID-8 domains

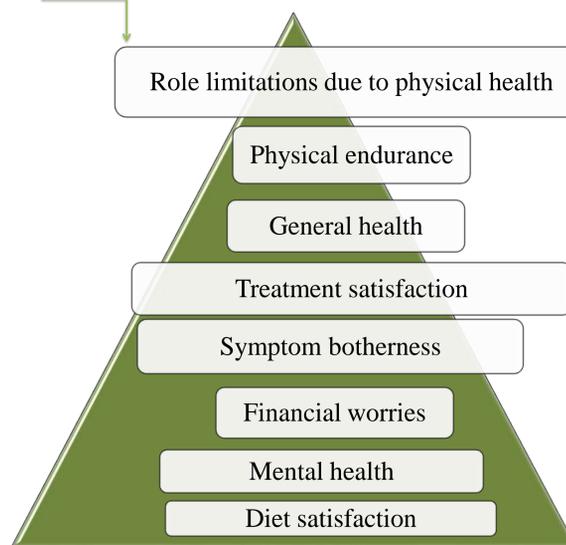


Table 1. Change in QOL scores in baseline and follow-up during treatment

Domains	Items	Baseline (Mean ± SD)	Follow-up (Mean ± SD)	P value	Minimum	Maximum
Role limitation due to physical health	6	14.27 ± 2.8	20.95 ± 1.3	****P<0.0001	6	30
Physical endurance	6	11.64 ± 5.7	19.29 ± 2.1	****P<0.0001	6	30
General health	3	6.745 ± 1.0	10.53 ± 1.6	****P<0.0001	3	15
Treatment satisfaction	4	10.28 ± 0.7	17.09 ± 0.9	****P<0.0001	4	20
Symptom botherness	3	7.805 ± 1.0	12.29 ± 0.9	****P<0.0001	3	15
Financial worries	4	10.90 ± 0.9	11.60 ± 1.4	****P<0.0001	4	19
Emotional/mental health	5	14.54 ± 1.8	19.18 ± 1.9	****P<0.0001	5	25
Diet satisfaction	3	8.635 ± 1.4	9.780 ± 1.6	****P<0.0001	3	15

Results: Total 200 type 2 diabetes patients with hypertension were recruited, patients were with mean age of (49.83 ± 9.36) years, 37.5% were males and 62.5% were females with 96.5% were married. The majority of the respondents were graduates or undergraduate's 40% and 14.5% was illiterate. Among the individuals, most of them were married 96.5%, 60.5% were from rural regions, and 64% and 36% were from lower or moderate income status families. Also, 36% patients had habit of exercise after onset of diabetes. The cronbach's alpha was also obtained for baseline QOLID score data to determine internal consistency of QOLID instrument in urdu version, the cronbach's alpha was observed as 0.89. At the end of the treatment, patients showed significant decreases in systolic blood pressure, diastolic blood pressure, fast blood glucose, post prandial glucose and glycated haemoglobin (follow-up). In comparison with baseline data, the study revealed *P<0.05 significant decrease with mean change of

- ❖SBP ($6.470 \pm 4.409^*$), DBP ($1.560 \pm 2.329^*$),
- ❖FBG ($42.38 \pm 42.40^*$), PPG ($73.00 \pm 44.70^*$) and HbA1C ($0.6220 \pm 0.3479^*$).

➤ **Conclusion:** Empagliflozin as an add on therapy has beneficial effect in improving QOL outcome, as demonstrated by significant improvement in role of limitation, physical endurance, general health, treatment satisfaction, symptom botherness, financial worries, emotional health and diet satisfaction. Hence, empagliflozin as add on therapy can serve as antidiabetic and anhypertensive drug at the same time and can improve the clinical outcomes of T2DM with hypertension. The endocrinologists and physicians should mandate the use of empagliflozin as an add on therapy with metformin, Teneagliptin and Glimepride to all diabetics' patients with hypertension as comorbidity.

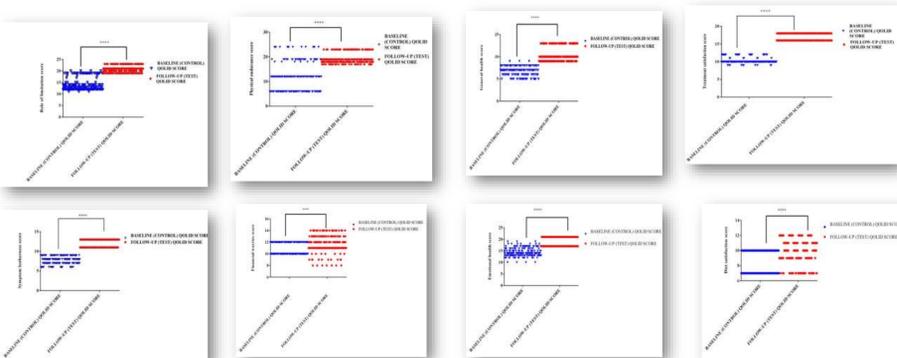


Figure 1. QOLID score increases with empagliflozin as an add on therapy to standard treatment as metformin, glimepride and teneagliptin to typ 2 diabetes with hypertension: the assessment of health related quality of life was done by QOLID scale. The patients were asked to evaluate their perception. The patients perception were evaluated on baseline and followup (after 3 months of empagliflozin as an add on therapy). Each triangle and circle corresponds to one patient (n=200) in baseline and followup respectively, the sample t test was used to compute the mean values. The range of score in role of limitation in physical health and physical endurance domain was 6-30. In general health domain the range was 3-15, whereas, in treatment satisfaction domain the range was 4-20. In symptom botherness, financial worries, emotional/mental health and diet satisfaction domain the range was 3-15, 4-19, 5-25 and 3-15 respectively. P value <0.05 was considered as significant. ****p<0.0001.

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