

# Evaluating the efficacy and safety of empagliflozin addition to insulin and oral antidiabetic medication (OAD) regimen in poorly controlled type 2 diabetes and obese patients

Hina sharif<sup>1\*</sup>, Sana Sharif Sheikh<sup>2</sup>, Ambreen Salman<sup>3</sup>, Zahida Jawed<sup>4</sup>,  
Ishrat Karim<sup>4</sup>, Tehseena Sohail<sup>4</sup> and Nadia Mohsin<sup>4</sup>

<sup>1</sup>Assistant manager Research & Publication Department SINA Health, Education & Welfare Trust, Karachi, Pakistan

<sup>2</sup>Data Analyst, SINA Health Education & Welfare Trust, Karachi, Pakistan

<sup>3</sup>Assistant Manager Medical Quality Assurance, SINA Health, Education & Welfare Trust, Karachi, Pakistan

<sup>4</sup>General Practitioner, SINA Health, Education & Welfare Trust, Karachi, Pakistan

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**Abstract:** Insulin resistance complicates diabetes care. Its effectiveness and tolerability as an addition to metformin, DPP4 inhibitor and insulin treatment in type 2 diabetic patients will be examined in this research. Participants with type 2 diabetes from poor socio-economic backgrounds had HbA1c values  $\geq 8.5\%$  when using Insulin+Metformin+DPP-4 inhibitors. They received 10mg Empagliflozin daily for 12 weeks (n=143). The main outcome was change in HbA1c at 12<sup>th</sup> week from baseline. Secondary outcomes were baseline weight and week 12 FPG. Adjusted mean (SE) HbA1c increases at week 12 were: Mean $\pm$ SD 10.38 (6.8-17.0) vs. Mean $\pm$ SD 9.05 $\pm$ 1.77 (5.60-16.0) with empagliflozin 10mg. When added to the regimen, empagliflozin significantly reduced FPG, systolic and diastolic blood pressure. The mean (SE) BMI increases from baseline were 31.28 $\pm$ 5.89 (16.0-66.0) and 29.73 $\pm$ 5.47 (3.0-46.0) with 10mg empagliflozin. Two individuals experienced urinary tract infections as AEs, but no genital infections. Adding empagliflozin 10mg daily to metformin+DPP4 inhibitor+insulin improved glycemic control, body weight and blood pressure for 12 weeks. The intervention was well-tolerated, highlighting empagliflozin's therapeutic potential.

**Keywords:** Insulin resistance, Type 2 diabetes, overweight, add-on therapy, glycemic control

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