



## Evaluation of Prescription Pattern and Difference of Cost-Effectiveness among Various Oral Anti Diabetic Medications

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**SUMMARY.** This study aims to analyze the prescription pattern and to compare the differential cost associated with antidiabetic drugs and incremental cost-effectiveness ratio of different therapies for the treatment of type-II diabetes mellitus at tertiary care setup of Karachi, Pakistan. A descriptive analytical study was conducted for the period of 3 months in 2019. The cost of oral antidiabetic medications in prescriptions was analyzed and the total prescription cost was calculated as the sum of the cost of the medication used and their cost difference were calculated from the cost of oral antidiabetic drugs by obtaining the incremental cost effectiveness ratio. Insulin was prescribed to 34 (13.6%) patients, 16 (6.4%) patients were receiving alpha glucosidase inhibitors in monotherapy. In combination therapy, the most frequently prescribed drugs in antidiabetic drug combination therapy were metformin, insulin, metformin + pioglitazone + insulin 74 (29.8%) and metformin + glipizide + insulin 61 (24.2%). It was concluded that our current study points out that patients were adequately controlled with biguanides (metformin) as monotherapy, while additionally drugs of class sulfonylureas provide efficacy in lowering the HbA1c to baseline  $\leq 7\%$ , and thiazolidinedione has incremental cost effectiveness in negative values that shows the cost-effectiveness of therapy.

**RESUMEN.** Este estudio tiene como objetivo analizar el patrón de prescripción y comparar el costo diferencial asociado con los medicamentos antidiabéticos y la relación costo-efectividad incremental de diferentes terapias para el tratamiento de la diabetes mellitus tipo II en un hospital de atención terciaria de Karachi, Pakistán. Se realizó un estudio analítico descriptivo durante un período de 3 meses en 2019. Se analizó el costo de los medicamentos antidiabéticos orales en las recetas y se calculó el costo total de la receta como la suma del costo del medicamento utilizado y su costo. La diferencia se calculó a partir del costo de los medicamentos antidiabéticos orales mediante la obtención de la relación costo-efectividad incremental. Se prescribió insulina a 34 (13,6%) pacientes, 16 (6,4%) pacientes recibían inhibidores de la alfa glucosidasa en monoterapia. En la terapia combinada, los medicamentos recetados con mayor frecuencia de fármacos antidiabéticos fueron metformina, insulina, metformina + pioglitazona + insulina 74 (29,8%) y metformina + glipizida + insulina 61 (24,2%). Se concluyó que nuestro estudio señala que los pacientes fueron controlados adecuadamente con biguanidas (metformina) como monoterapia, mientras que los medicamentos de sulfonilureas de clase proporcionan eficacia para reducir la HbA1c a basal ( $\leq 7\%$ ), y la tiazolidinediona tiene una rentabilidad incremental en valores negativos que muestra la rentabilidad de la terapia.

**KEY WORDS:** combination drugs, cost-effectiveness, type-II diabetes mellitus.

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