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Prescription pattern of Sodium Glucose Transport 2 co- inhibitors(SGLT2 inhibitors) among Metabolic Syndrome patients in a Tertiary care Hospital.

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Abstract

Background: The study aims to analyze the prescription pattern of SGLT2 inhibitors in patients with metabolic syndrome. These drugs have extensive role in controlling hypertension, hypercholesteremia, obesity other than their primary role in controlling diabetes.

Materials and Methods: It was a retrospective data analysis study done at a tertiary care hospital among the metabolic syndrome patients attending medicine OP during July 2023 to February 2024.

Results: The data showed that 25% percent of prescribed drugs included SGLT2 inhibitors, which can be further utilized in controlling the comorbid condition.

Conclusion: currently, the use of SGLT2 inhibitors have been limited for the prescription of metabolic patients, which can actually be augmented extensively in drug utilization in future.

Keywords:Sodium Glucose Transport 2 co- inhibitors(SGLT2 inhibitors), metabolic syndrome, prescription pattern

Introduction

A group of metabolic disorders known as metabolic syndrome (MetS) include insulin resistance, central obesity, hypertension, and atherogenic dyslipidemia. MetS is strongly linked to an increased risk of atherosclerotic and nonatherosclerotic cardiovascular disease (CVD), as well as diabetes.[1] In India, insulin resistance and MetS are widely prevalent. Studies have reported that in urban Indian populations, age-adjusted prevalence of metabolic syndrome was found to be overall, approximately 25% (approximately 31% in women and 18.5% in men).[2]

Controlling hypertension and other cardiovascular problems linked to diabetes mellitus is greatly aided by SGLT2 inhibitors. The rationale behind SGLT2i and GLP1a MDT is their distinct approaches to lowering HbA1c, their separate mechanisms of reducing cardiovascular risk (SGLT2i through hemodynamic effects, GLP1a through anti-atherogenic/anti-inflammatory mechanisms), their nephroprotective effects (reducing macroalbuminuria, slowing the time to end-stage renal disease, and lowering the time to doubling serum creatinine), and their combined weight-reducing qualities.[3]

Materials and Methods:

The study was done at a tertiary care hospital in south India to evaluate the drug utilization pattern of SGLT2 inhibitors in patients suffering from metabolic syndrome. The study aimed at collecting data of all the out patients with metabolic syndrome who had attended the medicine department. This was done from July 2023 to February 2024 ie for a period of 8 months.

The medical records department help was also sorted to completely evaluate the prescription pattern.

Statistical analysis: This was done by using the SPSS software and the results were tabulated.

Results:

Table 1 shows the number of metabolic syndrome patients enrolled for each month. The demographic details shows the males have higher incidence of metabolic syndrome than females.

Table 1:

s.no	month	number	Male	female
1.	July 2023	91	51	40
2.	August 2023	103	56	47

3.	September 2023	98	63	35
4.	October 2023	115	81	34
5.	November 2023	123	78	45
6.	December 2023	76	45	31
7.	January 2024	87	49	38
8.	February 2024	70	42	28

Table 2 demonstrates the prescription pattern of various drugs and their percentage

Table 2:

Drug combinations	Percentage	P value
Metformin plus enalapril plus atorvastatin	31%	**< 0.005**
Metformin plus sitagliptin	8%	< 0.3
Metformin with dapagliflozin	25%	**< 0.005**
Metformin with semaglutide	4%	< 0.5
Glipizide plus metformin plus atorvastatin plus amlodipine	7%	< 0.2
Glipizide plus sitagliptin	5%	< 0.2
Glipizide plus semaglutide	5%	< 0.7
Glipizide plus dapagliflozin	5%	< 0.9
Metformin plus valsartan	5%	< 0.5
Glipizide plus valsartan	5%	< 0.5

Discussion

The current study analyzes the role and utilization of SGLT2 inhibitors in metabolic syndrome patients. Approximately 25% of patients were prescribed SGLT2 inhibitors, with a statistical significance of P values less than 0.005. A population-based research conducted in Denmark found that among all patients with The percentage of T2DM who started using SGLT2i increased slightly year over year in relation to ASCVD (from 28% in 2014 to 30% in 2017).[4]

The countrywide population-based cohort data showed that while the percentage of SGLT2i use among T2DM patients has been rising annually, the proportion of SGLT2i use among eligible patients at high CV risk was not at acceptable levels. Globally, national cohort studies conducted through 2019 have

demonstrated that the decision to utilize SGLT2i in patients with T2DM is not significantly influenced by the presence or risk of CVD. A US cohort study has shown that among T2DM patients with high CV risk, the use of antidiabetic medicines with established CV advantages (SGLT2i, GLP-1 analogues) is not as beneficial as other cardioprotective treatments like statins or ACEi.[5]Regarding this, a recent thorough analysis of the putative mechanisms behind the cardioprotective effect of SGLT2 inhibitors—including Dapagliflozin—considered in research involving both humans and animals was conducted by Lahnwong et al.[6]

Conclusion

Many countries have considerably introducing SGLT2 inhibitors as a part of treatment regimen for metabolic syndrome patients. The developing countries are also aware of the importance of use of these group of drugs extensively.

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