SYNOPSIS

Dissertation Topic:

"Market Research on preference of GLIPTINS in Type 2 Diabetes Mellitus"

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Introduction

Gliptins are a notable class of pharmaceutical medicines that have been developed in order to curb the emerging issues surrounding type 2 diabetes mellitus (T2DM). This study aims at collecting experts' perspectives about gliptins use in type 2 diabetes through conducting a comprehensive market research survey.

The purpose of the study is to get further insight into the variables that influence the choice of gliptins, such as vildagliptin, linagliptin, and sitagliptin, by endocrinologists, diabetologists, and general practitioners.

Among the variables that will be considered are patient comorbidities, renal function, Hypoglycemia risk, cardiovascular profile, weight considerations, and overall views of drug efficacy and safety.

Aim and Objective

i. To Identify the Preference of Gliptins by the Doctors in T2DM.

ii. Based on Different Combinations and patient's portfolio, identify the needs of the Doctors and their Patients.

Literature review

Lesley J. Scott (2017): This review emphasises on Sitagliptin, known by various brand names such as Januvia and Xelevia, is a DPP-4 inhibitor used in over 130 countries to treat type 2 diabetes (T2D) either alone or with other blood sugar-lowering medications. It has proven effective across a wide range of T2D patients, including those who are obese, older, have kidney issues, or existing heart disease. Generally well tolerated, sitagliptin causes mainly mild to moderate side effects, leading to few discontinuations. It does not raise the risks of hypoglycemia or weight gain. In the TECOS cardiovascular safety study, it was shown to be as safe as a placebo concerning major heart events and did not increase heart failure hospitalizations. There has been significant discussion regarding the possible dangers of pancreatitis and pancreatic cancer with comparable therapies, but no clear cause has been identified. With its easy once-daily oral dosage, minimal drug interaction potential, and strong efficacy and safety, including heart safety, sitagliptin remains a key treatment for T2D. [4]

André Jacques Scheen Et al (2018): From the Study we concluded that with no gastrointestinal side effects, little risk of Hypoglycemia, and no tendency to cause weight gain, DPP-4 inhibitors are generally well tolerated. Though this adverse event was uncommon and absent from several observational studies comparing DPP-4 inhibitor users to nonusers, a small increase in acute pancreatitis was observed in cardiovascular outcome trials. Phase III trial meta-analyses and three sizable placebo-controlled studies have demonstrated cardiovascular safety Observational studies suggest that patients with type 2 diabetes may have better cardiovascular outcomes if they use DPP-4 inhibitors rather than sulphonylureas or other glucose-lowering drugs. No further clinical trials or observational studies have corroborated the higher risk of heart failure associated with saxagliptin, as reported in a single research. Research is needed to ascertain the frequency and underlying reasons of recently reported side effects, such as arthralgia..[5]

Marta Olivares et al (2024): The relationship between host metabolic health and gut microbiota is becoming more widely recognised, particularly in relation to the therapy of type 2 diabetic mellitus (T2DM). Gliptins, or dipeptidyl peptidase 4 (DPP4) inhibitors, are frequently used to

treat type 2 diabetes, yet little is known about how they interact with the gut flora. This work employed computational methods to examine the binding affinities of several gliptins to DPP4-like homologs generated by gut bacteria. Using computer modelling, we approximated the three-dimensional (3D) structures of DPP4 homologs from gut microbiota species, including Segatella copri, Bacteroides uniformis, Alistipes sp., and Phocaeicola vulgatus. Next, in order to confirm that these anticipated structures were stable, we ran 200 ns of molecular dynamics simulations. Using molecular docking, the stable structures were utilised to forecast binding interactions with recognised gliptins.[6]

Research Methodology

Research Design

➤ Type of Research Design

The market survey undertaken is an example of a descriptive research since the overall research design is rigid and pre-planned all throughout our study.

➤ Research Tool

Structured Questionnaire is used and framed in a way so as to derive maximum information from the Consultant Physicians, Endocrinologists, Diabetologists, Cardiologists of Jaipur regarding Preference of Gliptins used in Diabetes.

➤ Data Collection Method

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Primary Data Collection

- Data was collected through means of a structured questionnaire. The structured questionnaire was designed covering only open ended and questions.
- It was aimed to derive maximum information from the Consultant Physicians, Endocrinologists, Diabetologists, Cardiologists of Jaipur

Secondary Data Collection

Data was also collected from various sites on the internet, the sources are mentioned in the reference section.

Sample Size

100 Consultant Physicians, Endocrinologists, Diabetologists, Cardiologists of Jaipur

➤ Time Period of Project

3 months

➤ Data Analysis Technique

The data was compiled and analyzed in the Microsoft Excel.

Conclusion

1. Doctors are shifting in prescription from Vildagliptin and Glimepiride to Sitagliptin, Linagliptin, Dapagliflozin.
2. Maximum Doctors believes that the main reason to shift from Vildagliptin and Glimepiride to Sitagliptin, Linagliptin, Dapagliflozin is Lower Cardio-Renal risk.
3. Doctors considered Dapa to be causing UTI so they Didn't prefer Dapa, but based on Gliptins Doctors preferred LINA+Dapa as their 1st preference, SITA+Dapa as their 2nd preference and VILDA+Dapa as their 3rd preference.
4. In triple combination of Gliptins, Doctors preferred Sita+Dapa+Met as their 1st preference, Vilda+Dapa+Met as their 2nd preference and Lina+Dapa+Met as their 3rd preference.
5. Almost all Doctors agreed that there is a shift in prescription from Vildagliptin and Glimepiride to Sitagliptin, Linagliptin, Dapagliflozin.
6. During worsening renal function for T2DM Doctors Preferred Linagliptin the most.

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References

1. https://www.macleodspharma.com
2. https://my.clevelandclinic.org/health/diseases/7104-diabetes
3. https://www.verywellhealth.com/signs-of-diabetes-diagnosing-type-2-diabetes-1087272
4. Alexander GC, Sehgal NL, Moloney RM, Stafford RS. National trends in treatment of type 2 diabetes mellitus, 1994–2007
5. **Addition of incretin therapy to metformin in type 2 diabetes.** *Lancet.* 2010; **375**: 1410-1412
6. Fox CS, Larson MG, Leip EP, Culleton B, Wilson PW, Levy D. Predictors of new-onset kidney disease in a community-based population. JAMA. 2004;291:844–50