WEB OF SYNERGY:

International Interdisciplinary Research Journal

Volume 2 Issue 2, Year 2023 ISSN: 2835-3013

https://univerpubl.com/index.php/synergy

Advantages of Insupride in the Treatment of Type 2 Diabetes

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Article Information

Received: December 26, 2022

Accepted: January 27, 2023

Published: February 28, 2023

Keywords: *diabetes, hyperglycemia, glibenclamide, glycosylated hemoglobin, glucose, insulin, hypoglycemia*

ABSTRACT

Diabetes mellitus is a disease caused by insulin deficiency and metabolic disorders in the body. Hereditary or life-acquired types of the disease are distinguished, as well as insulin-dependent (type 1 diabetes) and non-insulin-dependent (type 2 diabetes). Type 1 diabetes often occurs in adolescence. In this case, the cells of the pancreas cannot produce insulin in the patient's body, and in their treatment, insulin preparations are used to reduce the amount of sugar. Diabetes In type 2 diabetes mellitus, insulin production from pancreatic islet cells is preserved, while the amount of insulin in the blood is normal or slightly higher.

The purpose of the study: Oral hypoglycemic drug insupiride (hypoglycemic belonging to the III generation sulfonylurea group) is used in the treatment of the disease. Insupride, the active ingredient of insulin, lowers blood glucose concentration, mainly by stimulating the release of insulin from pancreatic β-cells. Its effect is mainly related to the improvement of the ability of pancreatic β-cells to respond to physiological stimulation with glucose.

Compared with glibenclamide, low-dose insupiride causes less insulin release while achieving approximately the same reduction in blood glucose concentration. This fact indicates that glimepiride has extrapancreatic hypoglycemic effects (increasing tissue sensitivity to insulin and insulinomimetic effect). Insulin secretion. Like all other sulfonylureas, insupiride regulates insulin secretion by interacting with adenosine triphosphate-sensitive (ATPGA-sensitive) potassium channels in β-cell membranes. Unlike other sulfonylurea derivatives, insupiride selectively binds to a protein with a molecular weight of 65 kilodaltons located in the membranes of β cells of the pancreas. The interaction of insupiride with its binding protein regulates the opening or closing of ATP-sensitive potassium channels. Insupiride closes potassium channels. This causes depolarization of the β cells and leads to the opening of calcium channels and the influx of calcium into the cell. As a result, increased intracellular calcium concentration activates insulin secretion through exocytosis. Insupiride is much faster than glibenclamide and, accordingly, it is more likely to bind to the protein bound to it and to be released.

It is assumed that this feature of the high rate of exchange of insupiride with the protein associated with it determines its specific effect of sensitizing β-cells to glucose and protecting them from desensitization and early fatigue. The effect of increasing tissue sensitivity to insulin. Insupiride enhances the effect of insulin on glucose uptake by peripheral tissues. Insulinomimetic effect. Insupiride has a similar effect to the effect of insulin on the uptake of

glucose by peripheral tissues and the release of glucose from the liver. Glucose absorption by peripheral tissues is carried out by transporting it to muscle cells and adipocytes. Insupiride directly increases the number of glucose-carrying molecules in the plasma membranes of muscle cells and adipocytes. The increase in glucose cells leads to the activation of glycosyl phosphatidylinositol-specific phospholipase C, resulting in a decrease in intracellular calcium concentration and a decrease in protein kinase activity, which in turn stimulates glucose metabolism. Tablets should be swallowed whole without chewing, with a sufficient amount of liquid (about 1/2 cup). The dose of Insupiride is determined according to the results of the analysis of glucose in blood and urine. The drug should be administered in the minimum dose sufficient to achieve the desired metabolic control. During treatment with the drug, it is necessary to determine the level of glucose in the blood regularly. In addition, it is recommended to regularly monitor the level of glycosylated hemoglobin. Failure to take the drug, for example, skipping the next dose, should not be supplemented by taking the drug at a higher dose.

The doctor should instruct the patient in advance about the actions to be taken in case of errors in taking the drug (in particular, when skipping the next dose or skipping a meal) or in cases where it is impossible to take the drug. When insupiride is used multiple times in a daily dose of 4 mg, it reaches its maximum concentration in blood serum after 2.5 hours and is 309 ng/ml; the ratio between the dose and the maximum concentration of the drug, as well as the ratio between the dose and the AUC (the area under the "concentration-time" curve) is directly proportional,

Distribution is characterized by a very low volume of distribution (about 8.8 l) for insupirid, which is approximately equal to the volume of distribution of albumin, a high degree of binding to plasma proteins (above 99%) and a low clearance (about 48 ml per minute). Type 2 diabetes was diagnosed. The patient's blood sugar was 13-18 mmol/L when tested. After the patient took insupiride, the blood sugar level decreased to 9-13 mmol/L. After 3 weeks of taking insupiride and dieting, the blood glucose level is 5-7 mmol/L. If the sugar has been high for a long time, it should not be reduced sharply until it begins to decrease.

Summary. In animal studies, glimepiride is excreted in breast milk. It crosses the placental barrier. It crosses the blood-brain barrier poorly. Biotransformation and elimination. The half-life of the drug in plasma concentrations is 5-8 hours. After taking high doses, the elimination half-life increases. After a single dose of insupiride, 58% is excreted in the urine and 35% in the feces. derivative, and the other is a carboxy derivative. The final half-life of these metabolites after oral administration of insupiride is 3-6 hours and 5-6 hours, respectively. Pharmacokinetics of the drug in certain clinical situations Pharmacokinetic indicators of the drug are the same in groups of patients of different genders and different ages. Patients with impaired renal function (low CK) are expected to increase the clearance of Insupiride and decrease its mean concentration in blood serum, which is probably expressed by its faster elimination from the body due to the lower binding of the drug to proteins. Thus, there is no additional risk of accumulation of Insupiridin in this category of patients. Type 2 diabetes (in the form of monotherapy or as part of combined treatment with metformin and insulin) is used in cases where it is not possible to adequately control the amount of sugar in the blood with the help of diet, physical activity or weight reduction. It has been determined that insupiride is excreted in breast milk. During lactation, a woman should be transferred to insulin treatment or breast-feeding should be stopped.

There is no data on the use of Insupirid in children under 8 years of age. There are no data on the efficacy and safety of the drug in children under 8-17 years of age. It is not enough to swallow, so it is not recommended to use it. Tablets should be swallowed whole without chewing, with a sufficient amount of liquid (about 1/2 cup). The dose of Insupiride is determined according to the results of the analysis of glucose in blood and urine. The drug should be administered in the minimum dose sufficient to achieve the desired metabolic control. During treatment with the drug, it is necessary to determine the level of glucose in the blood regularly. In addition, it is

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References

1. A.S. Ametov. Type 2 diabetes mellitus. Problemy solution. Uchebnoe posobie 2015g
2. A. V. Dreval. Diabetic diabetes is popular for patients with diabetes in 2015
3. I.I. Dedov. Endocrinology 2010g
4. David Gardner. Basic and clinical endocrinology. Kniga 2 2020 g
5. I.I. Dedov. Spravochnik detskogo endocrinologina. 2011g
6. Yangiboyevna, N. S., & Ravshanovna, M. U. (2022). BIOLOGIK FAOL QO'SHIMCHALARNING TIBBIYOTDAGI AHAMIYATI. *BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI*, 542-545.
7. Rajabboevna, A. R., Yangiboyevna, N. S., Farmanovna, I. E., & Baxodirovna, S. D. (2022). THE IMPORTANCE OF COMPLEX TREATMENT IN HAIR LOSS. *Web of Scientist: International Scientific Research Journal*, *3*(5), 1814-1818.
8. Aslam, I., Jiyanboyevich, Y. S., Ergashboevna, A. Z., Farmanovna, I. E., & Yangiboevna, N. S. (2022). Muscle Relaxant for Pain Management. *Open Access Repository*, *8*(1), 1-4.
9. Murodovna, J. D., Bakhodirovna, S. D., & Yangiboyevna, N. S. (2022). Learning Liquid Medicine Forms and Writing Prescriptions for Medical School Students. *Central Asian Journal of Medical and Natural Science*, *3*(5), 72-76.
10. Murodovna, J. D., Ravshanovna, M. U., Azamatovna, F. G., & Ergashboevna, A. Z. (2022). ABU-THE ROLE OF THE TEACHINGS OF ALI IBN SINA IN THE UPBRINGING OF A HARMONIOUSLY DEVELOPED GENERATION. *Web of Scientist: International Scientific Research Journal*, *3*(5), 1522-1526.
11. Halimbetov, Y. M., Yuldashev, S. J., & Jalilova, D. M. (2022). ABU ALI IBN SINO VA UNING TA'LIMOTI. *BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI*, 403-405.
12. Jiyanboyevich, Y. S., Aslam, I., Ravshanovna, M. U., Azamatovna, F. G., & Murodovna, J. D. (2021). Ventricular Arrhythmias With Congenital Heart Disease Causing Sudden Death. *NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal| NVEO*, 2055-2063.
13. Murodovna, J. D., Bakhodirovna, S. D., & Yangiboyevna, N. S. (2022). Learning Liquid Medicine Forms and Writing Prescriptions for Medical School Students. *Central Asian Journal of Medical and Natural Science*, *3*(5), 72-76.
14. Murodovna, J. D., Bakhodirovna, S. D., & Yangiboyevna, N. S. (2022). Learning Liquid Medicine Forms and Writing Prescriptions for Medical School Students. *Central Asian Journal of Medical and Natural Science*, *3*(5), 72-76.
15. Rajabboevna, A. R., Farmanovna, I. E., & Murodovna, J. D. (2022). Optimization of the Treatment Algorithm of Patients with Low Resistance to Antiepileptic Drugs Using Pharmacogenetic Tests. *Eurasian Medical Research Periodical*, *11*, 95-97.
16. Жалилова, Д. М. (2022). Средства, Применяемые При Лечении Микролитиаза Жалилова Дилдора Муродовна. *AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI*, *1*(6), 104-106.
17. Jalilova, D. M. (2022). ABU ALI IBN SINO'S CONTRIBUTION TO FOLK MEDICINE AND ITS RELATIONSHIP TO MODERN MEDICINE. *Новости образования: исследование в XXI веке*, *1*(4), 508-509.