INSULINOMA: DIAGNOSTIC APPROACHES AND MEDICAL TACTICS

Davranova Aziza Davranovna
Scientific adviser:
Assistant of the Department of Endocrinology, Samarkand State Medical University

Akabayev Dilshodbek, Abdullayeva Umida, Ikromova Zebo
student of 402 group, Samarkand State Medical University

Keywords: insulinoma; hypoglycemia; 72 hour fasting test

INTRODUCTION

Insulinoma is the most common functioning pancreatic neuroendocrine tumor of β-cell origin, characterized by uncontrolled insulin production and in rare cases associated with MEN-1 syndrome. Insulinoma is a hormonally active tumor of β-cells of the islets of Langerhans, leading to the development of hypoglycemic attacks. In 1924, for the first time, the American doctor Seal Harris and the domestic surgeon V.A. Oppel simultaneously and independently described the syndrome of hyperinsulinism [1]. In the literature, there are different terms that imply an insulin-producing tumor: insulinoma, hypoglycemic disease, organic hypoglycemia, hyperinsulinism, insulin-secreting insulinoma. However, the term “insulinoma” is now generally accepted.

Relevance.

Insulinomas are rare: 1–4 cases per 1 million population per year in people 30–60 years old, up to 90% of cases are benign. This formation can be either sporadic (90%) or occur as part of the syndrome of multiple endocrine neoplasia type 1 (MEN-1) (10%), Wermer syndrome - hormonally active tumors of the parathyroid glands, adenohypophysis and tumors of the adrenal cortex (often hormonally inactive) [2]. Insulinoma is predominantly localized in the pancreas, but there are known cases of location outside the pancreas (splenic hilum, liver, duodenal wall, stomach wall, omentum, etc.) [3]. Hyperinsulinism can be both organic (insulinoma, adenomatosis, nesidioblastosis) and functional - as a result of fasting, surgical interventions on the stomach, the development of dumping syndrome, severe liver dysfunction, uncompensated hypothyroidism, uncompensated adrenal insufficiency, the initial stage of development of diabetes mellitus 2- type, autonomic dysfunction, etc. The clinical picture is caused by the release of contrainsular hormones (norepinephrine, glucagon, cortisol, somatotropic hormone) in response to hypoglycemia, which develops as a result of uncontrolled secretion of insulin by pancreatic β-cells. Adrenergic symptoms

(tremor, anxiety, palpitations, nightmares) due to chronic hypoglycemia are replaced by glycopenic symptoms: weakness, drowsiness, dizziness, convulsions, decreased attention, impaired coordination of movements, neuropsychic disorders (hallucinations), symptoms of damage to the peripheral nervous system, etc. Prolonged and insufficient energy supply to the brain is initially accompanied by functional neurological disorders, and subsequently hypoglycemia leads to irreversible dystrophic changes in the central nervous system, making it difficult to verify the diagnosis in clinical practice. The diagnostic sign of insulinoma is Whipple's triad, which includes clinical manifestations of hypoglycemia on an empty stomach, a decrease in blood glucose level of 2.7 mmol/l or after 72 hours. If the patient has no symptoms of hypoglycemia and a decrease in glycemia within 72 hours.

PURPOSE OF THE STUDY

The purpose of the study was, based on a retrospective analysis, to evaluate diagnostic approaches and treatment tactics in patients with insulinomas.

RESEARCH METHODS

An analysis of the medical history data of 72 patients admitted with suspected organic hyperinsulinism (2022-2023) was carried out. The age of the patients ranged from 20 to 79 years. To confirm endogenous hyperinsulinism, patients underwent: a 72-hour fasting test, assessing the level of glucose, insulin, blood c-peptide, ultrasound and/or MSCT/MRI of the abdominal organs. Statistical data processing was performed using the Statistica 10.0 program

RESULTS

the diagnosis of organic hyperinsulinism was confirmed in 32 patients. Only 1 patient had insulinoma within the framework of MEN type 1 and was combined with the presence of primary hyperparathyroidism and a hormonally inactive pituitary microadenoma. When conducting a test with a 72-hour fast, hypoglycemia was achieved in 100% of cases within the first 48 hours from the start of the test. Analysis of the examination results in 50% of cases revealed the size of the pancreatic mass to be more than 1.4 cm. An inverse correlation was established between the size of the mass and the level of blood plasma glucose when hypoglycemia was achieved ($r=-0.45$, $p=0.02$). Thirty of the 32 patients underwent surgical treatment: enucleation of insulinoma was performed in 40% of cases, distal pancreatectomy in 60%. In 27 patients, the presence of insulinoma was confirmed, in three, according to histological examination, a diagnosis of "congenital organic hyperinsulinism" was established. In the early postoperative period, patients were discharged from the hospital on days 11-30. Only 12 (40%) patients had postoperative complications; in other cases, the postoperative period was uneventful and the duration of hospitalization was 13.0±1.4 days ($p<0.01$).

CONCLUSION

The data from the study confirm that for the successful management (diagnosis and treatment) of patients with endogenous hyperinsulinism, an integrated team approach is required, including a fasting test, the use of modern imaging methods and the use of high-tech treatment methods.

REFERENCES:

1. Sh, N. G., Salimova, D. E., & Alisherovich, B. A. (2022). RELATIONSHIP BETWEEN DIABETIC NEPHROPATHY AND CARDIAC DISORDERS IN PATIENTS WITH TYPE 2 DIABETES. PEDAGOG, 5(5), 337-340.
2. Sh, N. G., Salimova, D. E., Oybekovma, X. S., Qamariddinovna, X. A., & Amin o‘g‘li, B. J. (2022). ENDOCRINE GLANDS, STRUCTURE, AGE FEATURES, FUNCTIONS. PEDAGOG, 5(5), 341-345.
3. Shukhratovna, N. G., & Erkinovna, S. D. (2023). Features of the Course of Type 2 Diabetes Mellitus in Combination with Arterial Hypertension and Ways to Correct Them. Eurasian Medical Research Periodical, 17, 39-41.
4. Shukhratovna, N. G., & Erkinovna, S. D. (2022). THE ROLE OF GASTROINTESTINAL HORMONES IN THE PATHOLOGY OF THE DIGESTIVE SYSTEM. PEDAGOG, 5(6), 408-412.
5. Негматова, Г. Ш., & Салимова, Д. Э. (2023). Особенности течения сахарного диабета 2 типа в сочетании с артериальной гипертонией и пути их коррекции. Ta’lim fidoyilari, 2(1), 82-86.
6. Sobirjonovna K. N. Factors determining the clinical significance of depiptidyl peptidase 4 inhibitors in the treatment of patients with type 2 diabetes mellitus //World Bulletin of Public Health. 2022. Т. 8. – С. 67-72.
7. Курбонова Н.С. Негматова Г.Ш. “Ортиқча вазнли қизларда хайз даврининг бузулиши”// Тиббиётда янги кун. 9(47) 287-291 бет. 2022
8. Курбонова Н.С. Негматова Г.Ш. "Эриктильная дисфункция у больных сахарным диабетом и ее клинический анализ"//Биомедицина ва амалиёт 5.1 сон. 160-165 бет. 2022 йил.
9. Курбонова Н.С. "Clinical manifestations and classification of lesions of the macular area in diabetes." Eurasian scientific herald. Vol13/2022/ 97-101стр.
10. Курбанова Нозима Сабиржановна “FACTORS DETERMINING THE CLINICAL SIGNIFICANCE OF DEPIPTIDYL PEPTIDASE 4 INHIBITORS IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS” World Bulletin of Public Health (WBPH)Volume-8, March 2022 67-72
11. Nazira K., Siddikovna T.G., Davranovna D.A., Takhirovich D.A., Tulkinovich O.S. (2021). Cardiovascular complications in patients with covid and diabetes mellitus 2. Central Asian Medical and Natural Science Journal, 2(3), 37-41.
12. GROWTH HORMONE FOR THE TREATMENT OF HEREDITARY DISEASES IN CHILDREN Ortikov Shahzod Tulkinovich. Karimova Nazira Alimovna, Kurbanova Nozima Sobirjanovna, Daminov Abdurasul Takhirovich /

International Journal of Innovative Engineering and Management Research. 2021 281-284.
13. Features of the course of type 2 diabetes mellitus with arterial hypertension and ways of their correction Negmatova Gulzoda Shukhratovna, Salimova Dildora Erkinovna Eurasian Medical Research Journal 17, 39-41, 2023.
14. FEATURES OF THE TECHNIQUE OF TYPE 2 DIABETES MELLITUS IN COMBINATION WITH ARTERIAL HYPERTENSION AND WAYS OF CORRECTION IX G.Sh. Negmatova, D.E. Salimova LLC "Research and publications", Enlightener, 2023.
15. Features of the coexistence of type 2 diabetes mellitus with arterial hypertension and their treatment Gulzoda Shukhratovna Negmatova, Dildora Erkinovna Salimova LLC "Ochik fan", Science and education, 2023.
16. Khalimova Z.Yu. and G.Sh. Negmatova. Autoimmune polyglandular syndromes. Literature review". Central Asian Journal of Medical and Natural S
17. Даминов А., Хайдаров О., Хасанова М. и Абдукахорова Р. (2023). ОСЛОЖНЕНИЯ ГЛЮКОКОРТИКОИДНОЙ ТЕРАПИИ У ПАЦИЕНТОВ С ДИАБЕТОМ, ПЕРЕЖИВШИХ КОВИД-19. Евразийский журнал медицинских и медицинских наук , 3 (4), 197-200.ciences 2.4 (2021): 166-175.
18. Khamidova M.N., Ismatova I.F., Zh.Sh. Berdirov, G.Sh. Negmatova and A.T. Daminov. "DIABETES AND COVID-19". Eurasian Journal of Medicine and Natural Sciences 2, no. 13 (2022): 190-204.
19. Takhirovich D.A., Burchaklar S.J.A., Shukhratovna N.G., Shukhratovna S.G., Zainuddinovna M.G. (2022). COURSE OF COVID-19 IN PATIENTS WITH DIABETES. Web of Scientist: International Journal of Scientific Research, 3(02), 73–76.
20. Takhirovich D.A., Korners S.J.A., Shukhratovna N.G., Shukhratovna S.G., Zainuddinovna M.G. (2022). COURSE OF COVID-19 IN PATIENTS WITH DIABETES. Web of Scientist: International Journal of Scientific Research, 3(02), 73–76.
21. Abduvali, X., Otabek, S., Asilbek, E., & Daminov, A. T. (2023). TYPE 2 DIABETES: TIME TO CHANGE THE CONCEPT. Science and innovation, 2(D4), 165-167.
22. Togaeva G.S. «Ўз-узини назорат қилиш мактабида ўқиган қандли диабет 2 тип билан касалланган беморларнинг клиник ва биохимиявий курсаткичлари». Journal of Biomedicine and Practice 2 Special Issue. Tashkent in 2020. Pages 132-135.
23. Togaeva Gulnora Siddikovna., Oripov Firdavs Suratovich., Davranova Aziza Davranovna.: "Structural features of cells of the islets of Langerhans in offspring with alloxonic diabetes" (Review article). Annals of the Romanian Society for Cell Biology 2021; P.158-162
24. Negmatova G.Sh, Togayeva G.S., Davranova A.D., Azimbegova S.N. “Assessment of the effectiveness of cardioprotectiva drugs in treatment of childeren with diabetic cardiomyopathy”/ The American juornal of medical sciences and pharmaceutical research//4.01. 79-83.

25. Negmatova G.Sh., Togayeva G.S., Davranova A.D., Azimbegova S.N. Uzbek medical journal. // Criteria for physical and sexual devolopent in with thyroid diseases. 4. 32.
26. Negmatova G.Sh, Togayeva G.S., Davranova A.D., Azimbegova S.N. “Assessment of the effectiveness of cardioprotectiva drugs in treatment of childeren with diabetic cardiomyopathy”/ The American juornal of medical sciences and pharmaceutical research//4.01. 79-83.
27. Dzhuraeva Z.A. Negmatova G.Sh. The state of the cardiovascular system in patients with hypothyroidism. Use of highly innovative technologies in preventive medicine. Republican scientific-practical conference. Andijon 2020.
28. Z.Y Xalimova G.Sh. Negmatova - "Аутоиммунные Полигландулярные Синдромы. Обзор Литературы”. Central Asian Journal of Medical and Natural Science, 2021
29. Endocrinology: national guidelines. Ed. Dedova I.I., Melnichenko G.A. M.: GEOTAR-Media; 2016.
29. Aramovna D. Z., Azamatovna H. D. Features of the Pathology of the Reproductive System in Pubertal Patients with Hypothalamic-Pituitary Dysfunction //EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY. – 2023. – Т. 3. – №. 2. – С. 74-77.
30. Qodirov, E. A., Ismoilov, S. I., Valiyev, J. J., & Daminov, A. T. (2023). Qandli diabet bilan og‘rigan bemorlarda COVID-19 xavfining ortishi patofiziologiya, davolash va oldini olishdagi dolzarb muammolar. Science and Education, 4(3), 91-101.
31. Daminov, A., Khaydarov, O., Hasanova, M., & Abdukakhorova, R. (2023). COMPLICATIONS OF GLUCOCORTICOID THERAPY IN PATIENTS DIABETES SURVIVED COVID-19. Евразийский журнал медицинских и естественных наук, 3(4), 197-200.
32. Урунова, Ф. З., Амирова, Ш. А., Базарова, В. Р., Бахронова, М. Б., & Даминов, А. Т. (2023). Осложнения глюкокортикоидной терапии при COVID-19 на фоне сахарного диабета 2-типа. Science and Education, 4(2), 520-529.