

Case Study: A patient with Type 2 Diabetes diagnosed acute gastroenteritis and essential hypertension.

Praveen N M

Post Graduation Department of Biotechnology, JJS Arts,
Science & Commerce (Ooty Road), Mysuru, Karnataka, India-570025.

Abstract

Objective: The present a case report of well-known type 2 diabetes mellitus having acute gastroenteritis and essential hypertension with uncontrolled hyperglycemia.

Case report: A 59 years old male patient having type 2 diabetes mellitus since three years, admitted with abdominal discomfort and generalized weakness. Physical examination and laboratory diagnosis suggested mild hypertension and abdominal infection along with hyperkalemia and hyperuricemia.

Conclusion: The patient was treated with probiotics capsule, anti-bacterial and antihypertensive drugs along with previously recommended anti-diabetic therapy to overcome abdominal discomfort, acute gastroenteritis, essential hypertension and hyperglycemia.

Keywords: Type 2 diabetes mellitus, acute gastroenteritis, and hypertension.

Introduction:

Diabetes mellitus, a non-communicable disease commonly that emerges various health issues globally along with huge social and economic consequences. High incidence of diabetes mellitus categorized by the metabolic activity of hyperglycemia those results in imperfection of insulin oozing, insulin exploits or both. Chronic hyperglycemic complications are seen in nephropathy, retinopathy, neuropathy, cardiovascular disease, kidney, blood vessels, stroke, and death; they can be prevented with appropriate treatment (American Diabetes Association, 2010; Ozougwu JC et.al., 2013).

Diabetes mellitus can be controlled by maintaining proper lifestyle, physical activities, and maintain body weight. The study note on anti-bacterial infection affects patients who suffer from type 2 diabetes mellitus and affects essential hypertension.

Case Report

A 59 years old male was admitted at Apollo BGS Hospital, Mysore (Karnataka) with a history of multiple episodes of loose stools-watery, non-bloody since yesterday. He had also developed vomiting, 2-3 episodes, and non-projectile, non-bilious since before admit. He had noticed abdominal discomfort, easy fatality and generalized weakness, with no history of fever, GI bleed, and jaundice or decreased urine output. The case study was well known of type 2 diabetes mellitus, with essential hypertension on treatment was suggested. He has no history of similar episodes in the past.

He was diagnosed with acute gastroenteritis and treated with IV fluids, antibiotics, antiemetic and other supportive measures. Renal function test (RFT) showed hyperkalemia, with low sugars level during the time of admit, and hence OHAs has been stopped and anti-diabetic medications were adjusted according to blood sugar as per physician advice. He gradually improved symptomatically during the course period.

Physical examination

The patients appeared with acute gastroenteritis and essential hypertension. No pallor, icterus, dubbing, cyanosis, lymphadenopathy or pedal edema with following interpretation, Pulse – 80/min, Blood Pressure – 130/70 mm Hg, P/A – Soft, BS+, CVS – S1, S2+, No murmur, RS – NVBS+, No added sounds and CNS – No focal neurodefectis.

Laboratory Investigation: Blood sample was taken in order to study Hematological test, urea, creatinine, uric acid, sodium, potassium, chloride, random blood sugar (RBS) and potassium for ISE (Table No 1). The tested report shows elevated in uric acid on 13/08/2015 during the time of discharge again laboratory investigation conducted this report shown normal readings on 15/08/2015,

Table No 1 : Biochemistry Investigation for renal function, serum electrolytes, blood sugar & Hematological findings.			
Investigation	Results on different date		Reference Range*
	13-08-15	15-08-15	
Urea	27	25	13-43
Creatinine	1.2	1.3	0.9-1.3
Uric acid	7.4	7.2	3.5-7.2
Sodium	136	136	136-145
Potassium	6.4	3.9	3.5-5.1
Chloride	99	99	98-107
RBS	90	137	60-160
Potassium (Ion-Selective Electrode)	5.1		3.5-5.1
Hemoglobin	15.3		13.0-18.0
RBC count	5.42		4.5-5.5
PCV	44.2		40-50
WBC count	10830		4000-11000
Neutrophils	76		40-75
Lymphocytes	13		20-45
Eosinophils	3		01.-06
Monocyte	8		02.-10
Basophils	0		00-02
Platelet Count	235000		150000-450000
The given reference range was considered according to the laboratory hospital			

Medications:

Prescribed medications with anti-bacterial and anti-diabetic drugs are advised during discharge (Table No 2).

Table No 2: Medication	
Prescribed Medication	Health effects after intake of drugs
BIFILAC SACHET capsule for week, twice a day.	Maintains healthy balance of micro-flora in intestine.
ORNI-O for four days, twice daily.	Fights against bacteria that cause infection.
PANTOCID DSR capsule twice daily before meal for a week.	Reduced acids present in stomach.
NOVAMIX (30/70) insulin (18-0-18 unit) twice a day	Decreased blood glucose over prolonged period of time.
OLMIGHTY 20mg once a day	Manage hypertension.
ISTAMET (50/500) twice a day	Reduce glucose level by ability to restore.
TRIMETADAY V2 twice a day before meals	Reduce blood glucose absorbed in intestine as predictor to liver.
SR PEVESCA PLUS twice a day	Relieve anxiety

Discussion:

Diabetes mellitus can be treated by using variant drug therapy, the main drug to control diabetes mellitus is metamorphine high dose of this medicine may cause life threaten. The supplements drugs are used to control diabetes along with reduced form with the combination of different medicine. It is used with meals that reduce acute gastroenteritis discomfort, latent it causes lactic acidosis. Acute gastroenteritis appearance may strikes through acute pancreatitis by their coexisting activity. Occurrence of acute gastroenteritis can cause nausea, vomiting, non projectile, non bilious, of loose stools-watery, non-bloody, abdominal discomfort, easy fatigally and generalized weakness (Kalantar-Zadeh K,et.al., 2013).

Several metabolic abnormalities are expansion due to conflict of insulin that may affects type 2 diabetes mellitus, obesity and the metabolic syndrome. Increased stress oxidative process by metabolic altitude of glucose and free fatty acid level in blood vessels. Decreased sensitivity of insulin can note the extent level of oxidative stress (Gordon LA et.al., 2008 : C Kumar et.al., 2017). Consequence of beta cells dysfunction from extended exposure to glucose concentration higher range that can be induce mitochondrial reactive oxygen species that may restrain induced glucose insulin secretion in first phase (Lee BY,et.al., 2009) .

Angiotension converting enzyme (ACE) inhibits largely seen patients who treated with type 2 diabetic mellitus during the treatment of acute hypertension or hypertensive. Diabetic nephropathy treated by using captopril which has been approved while in certain clinical cases physician suggest supplement drug that works as captopril, its ACE inhibitors appears more effective. Instead of captopril they suggest olmighty 20mg in this case. Sluggish sequence of nephropathy may show by the activation of ACE inhibitor. Blood pressure management has to be made according to their existence changes (Luerding JA, 2000). This study proves that taking proper diet; regular exercise may helps to control blood glucose level and maintains optimal body weight.

Consent for publication

The authors declare that this article is original, has never been published, and has not been submitted to any other journal.

Ethics approval and consent to participate

Not applicable

Authors' contribution

Praveen N M wrote the manuscript, edited and finalized the manuscript read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interest.

Reference:

- [1] American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes care*. 2010 Jan 1;33(Supplement 1):S62-9.
- [2] Ozougwu JC, Obimba KC, Belonwu CD, Unakalamba CB. The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus. *Journal of Physiology and Pathophysiology*. 2013 Sep;4(4):46-57.
- [3] Kalantar-Zadeh K, Uppot RN, Lewandrowski KB. Case 23-2013: A 54-year-old woman with abdominal pain, vomiting, and confusion. *New England Journal of Medicine*. 2013 Jul 25;369(4):374-82.
- [4] Gordon LA, Morrison EY, McGrowder DA, Young R, Fraser YT, Zamora EM, Alexander-Lindo RL, Irving RR. Effect of exercise therapy on lipid profile and oxidative stress indicators in patients with type 2 diabetes. *BMC complementary and alternative medicine*. 2008 May 13; 8(1):21.
- [5] C Kumar, M Vijayasimha, R P Jayaswal, A L Sah, Meenakshi, R K Jha, N M Praveen. Screening Diabetes through Glycated hemoglobin (HBA1C) in North Indian Population. *European J. biomed. Pharm. Sci*. May-June 2017. 4 (7): 460-464.
- [6] Lee BY, Al-Waili N, Stubbs D, Wendell K, Butler G, Al-Waili T, Al-Waili A. Ultra-low microcurrent in the management of diabetes mellitus, hypertension and chronic wounds: report of twelve cases and discussion of mechanism of action. *Int J Med Sci*. 2009 Jun 12;7(1):29-35.
- [7] Luerding JA. Case study: A 57-year-old man with type 2 diabetes, hypertension, and microalbuminuria. *Clinical Diabetes*. 2000 Jul 1;18(3):132.