

The Influence of Self-control of Glycemia and Blood Pressure in the Development of Complications of Diabetes in Time Social Isolation at Covid 19 Pandemic

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Abstract

Managing chronic diseases in conditions of social isolation is quite difficult and requires the development of adequate services. There is no diabetes registry in our country, therefore it is not possible to determine the needs of patients. The aim of the study is to compare the opinion of diabetic patients and doctors regarding the management of the disease during the covid-19 pandemic in the conditions of social isolation. How adequately were simple tools such as self-monitoring of blood glucose and blood pressure in the apartment used during isolation. Material and methods: a cross-sectional study method using a special questionnaire was selected for the research design. Two questionnaires were developed for doctors and diabetic patients. During the isolation 11% of patients did not monitor blood glucose level, According to doctors opinion, 3% of patients did not test for blood glucose, In the group of patients, 19.5% did not test their blood pressure. Conclusion: according to the data of the mentioned study, it is clear

that inadequate control of glycemia and blood pressure in diabetic patients increases the risk of developing cardiovascular disease and death.

Keywords: Diabetes mellitus, Covid 19, social isolation

Background: Diabetes mellitus is one of the main causes of death in both developed and developing countries. There is convincing evidence that in many developing and industrialized countries it reaches epidemic proportions. The disease is characterized by development of acute (ketoacidosis, hyperglycemia, hypoglycemia, coma) and late complications, such as neuropathy, nephropathy, renal failure, retinopathy, decreased vision, cardiovascular diseases, amputations, which increases the risk of Disability. The macrovascular complications are (heart attack, stroke, thrombosis) the main cause of death of patients with diabetes.

(https://diabetesatlas.org/idfawp/resource-files/2021/07/IDF_Atlas_10th_Edition_2021.pdf)

A number of controlled clinical trials demonstrate that intensive diabetes control can significantly reduce the development and/or progression of complications in people with diabetes. (ADVANCE & Patel A, 2008)

According to the International Diabetes Federation, if in recent years the age limit had been increased from 18 to 99 years, the number of people with diabetes would have reached 451 million people. Experts assume that by 2045 there will be 693 million people aged 18-99 and 20-79 years. 629 million people in this age group will suffer from diabetes.

(https://diabetesatlas.org/idfawp/resource-files/2021/07/IDF_Atlas_10th_Edition_2021.pdf)

Diabetes mellitus and uncontrolled glycemia are important predictors of serious morbidity and mortality in patients infected with various viruses, including pandemic influenza A (H1N1) of 2009, SARS-CoV and MERS-CoV. During the current SARS-CoV-2 pandemic; (Xiao Y, 2020) (Coronavirus disease (COVID-2019) situation reports, n.d.) Because of the acute and serious threat of the Covid pandemic, social distancing and isolation can be a reliable way to slow down the spread of the virus. This was well demonstrated in China (Sun Chenvibound 2020), but these measures are too long in time, and when assessing the risk, it is necessary to consider short-term and long-term secondary damage from isolation. (Casqueiro J & Alves C., 2012 Mar;16 Suppl 1) (Heffner, K. M. E.,, Eaton, C. B. and Gramling, R.; L., Waring., 2011) (McHugh JE, Kenny RA, Lawlor BA, Steptoe A, Kee F.Int J, 2017) Long-term social isolation is associated with increased risk of depression, suicidal ideation, and premature death (Baumiester, Leary 1995; Holf-Lunstad et al 2010).

There is a model of "temporary need-danger" (Williams 2009), which implies that when people are physically and emotionally isolated for a long time, they enter a stage of submission (Riva a Esk 2016), which is characterized by feelings of alienation, helplessness, worthlessness and inhibition, and then moves to ostracism (Greek: expulsion) and in the form of exclusion, which is prolonged and can last for months and years (Zadro 2004). More than three months of social isolation can significantly worsen not only mental, but also physical health. (Riva et al. 2014)

The Covid-19 pandemic and the subsequent mutations of the virus have shown us that the treatment of chronic diseases in the conditions of social isolation is quite difficult and requires the development of adequate services. There is no diabetes registry in our country, so it is not possible to determine the needs of patients.

For the first time in Georgia, there was a study in parallel two groups.

The purpose of the study is to compare the opinion of patients with diabetes and doctors about the management of the disease during the COVID-19 pandemic in the condition of social isolation. How adequately were such simple tools used as self-monitoring of blood glucose level and blood pressure in the apartment during social isolation/ or lockdown.

Material and methods: as a research design were chosen a cross-sectional research method using a special questionnaire. Two questionnaires were developed for doctors and patients with diabetes. Both questionnaires were transferred into Microsoft format.

Inclusion criteria

Age from 40 to 65 years

Manifestation of diabetes for more than 1 year

Exclusion criteria

Non-diabetic patient

Age less than 40 years and

65 years and over

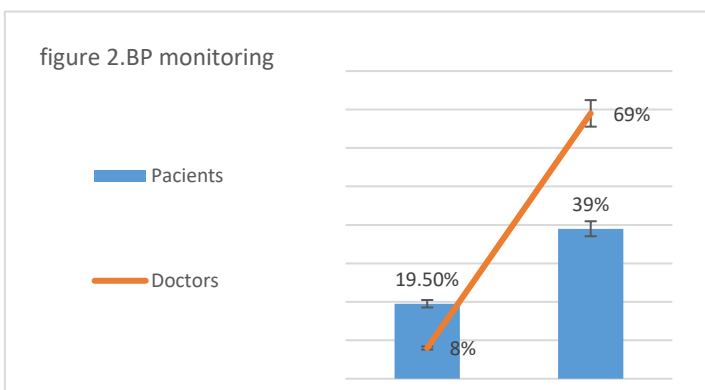
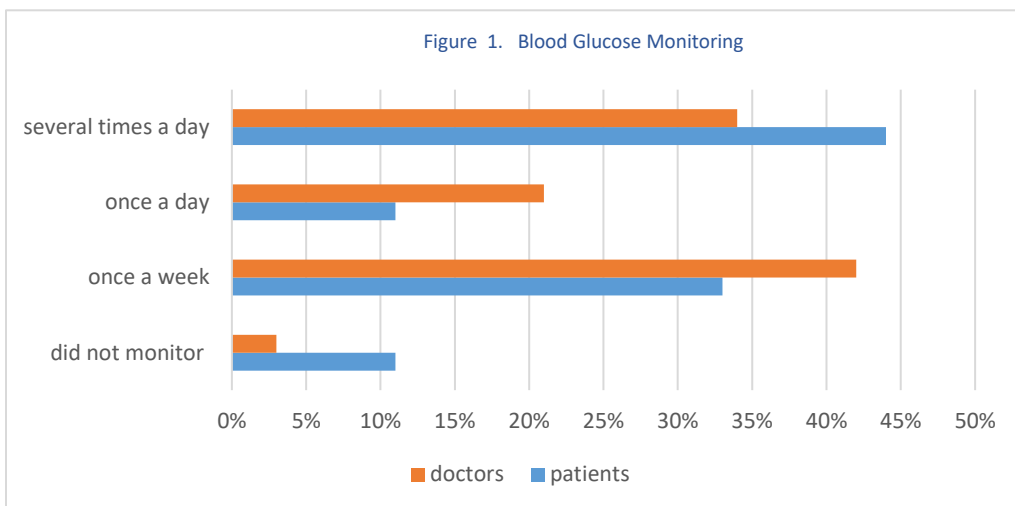
The duration of diabetes is less than 1 year

Refusal to participate

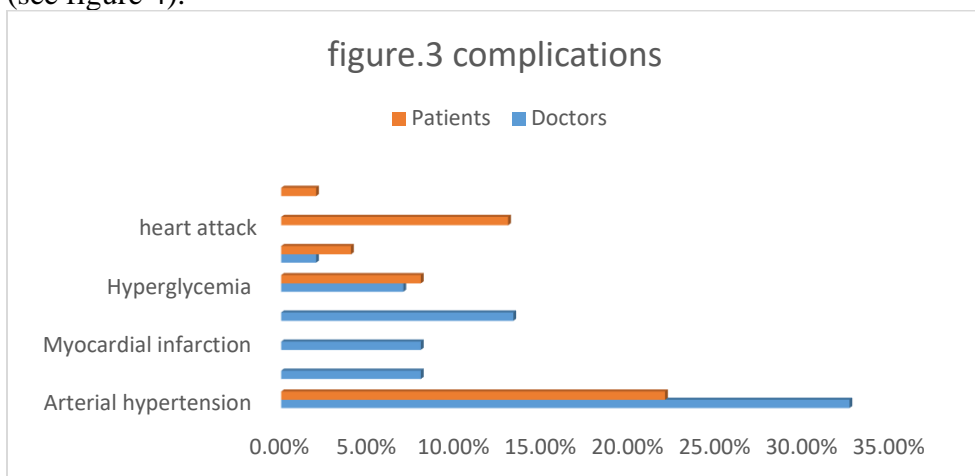
The study was beginning in October 2021 by this time 320 patients with diabetes and 82 doctors (15 endocrinologists and 57 family doctors) took part in the survey. Patients 44,3% male and 55,7% female. 97,8 % nationality Georgian, middle age 51-60years old -49,2% (see table 1).

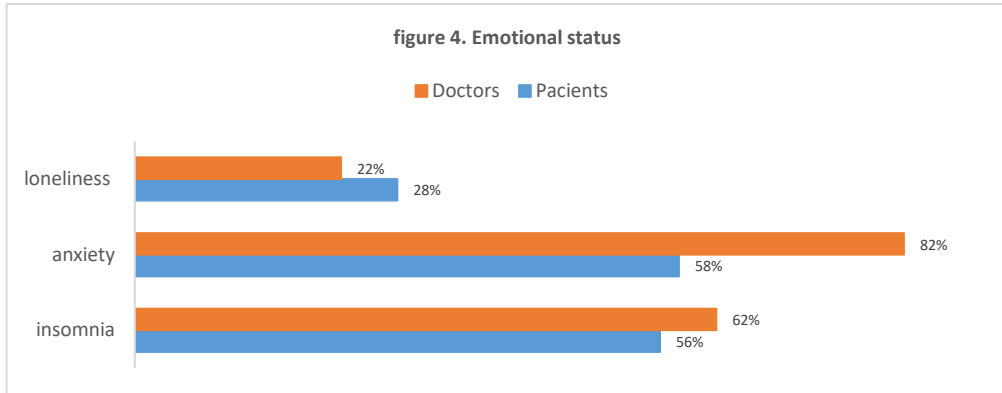
Table 1.

Variable Name		N	%
Gender	Male	142	44,3
	Female	178	55,7
Nationality	Georgia	313	97,8
	Armenia	4	1,4
	Russia	3	0,8
Age	20-30	5	1,5
	31-40	14	4,4
	41-50	74	23,2
	51-60	157	49,2
	61-65	66	20,7



Results and discussion: The question which we interesting was how the patients use the sample measures as glucose and blood pressure monitoring at home. 97% of interviewed patients have own glucometer and tonometer. according to preliminary data did not test blood glucose 11%;once a week tested 33%, once a day 11% and several time per day 44%. From doctors opinion during isolation patients only 3% did not check glucose level, 42% tested once a week, 21% one time at day and 34% several time per day 44%. in the patients group did not check glucose was higher percent, then the doctors group 11%- 3% (see figure 1). Blood Glucose level between 140-250 mg% in the group of patients 72%, in the group of doctors 84.5% . BP (blood pressure)measurement - did not checked In the group of patients was 19.5% . BP was increase 150 mm/hg in 39% cases of patients, in doctor group- 69% (see figure 2). According to the interviewed doctors, it was established, that CVD complications and medical intervention was needed 13% of patients for angina pectoris attack, 8% both myocardial infarction and heart failure, arterial hypertension in 43% cases, hyperglycemia 7% cases and hypoglycemia 2%; From patients in 13% cases was heart attack, 22% high blood pressure , hyperglycemia 8% and hypoglycemia 4% cases, kidney attack due to stone 2% (see figure 3). There was insomnia In both groups, in the group of patient 56% and 62% in the group of doctors. anxiety was higher in the group of doctors 82% then in the group of patients 58% . In the both groups Feeling of loneliness was 28% (see figure 4).





Conclusion: according to the data of the indicated study, it is evident that inadequate control of blood glucose and blood pressure in patients with diabetes increases the risk of developing cardiovascular diseases and death, especially with emotional instability, infection, and social isolation. It is necessary to increase the awareness of patients and doctors about self-control of blood pressure and glycemia, it is necessary to explain in more detail the importance of these simple measures in the prevention of complications of diabetes.

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