

THE STUDY OF NEWLY DISCOVERED CASES OF DIABETES MELLITUS IN BIHOR COUNTY

Vlad Ioana Andra *

*University of Oradea, Faculty of Environmental Protection, Bd. Magheru 26

ioana_andravlad@yahoo.co.uk

Abstract

Diabetes mellitus is an extremely important public health problem in Romania and worldwide due to its high prevalence, serious complications and at last but not the least, due to induced high costs.

World Health Organisation estimated in 2000 that approximately 172 mil. persons suffer from this condition representing 50% of the prevalences compared to the year 1990. The prognoses show that in 2030 the level of diseased people will reach 360 mil.

The proposed study presents the analysed new cases of diabetes detected during 2011, in Bihor county and registered in the County Sub Program for Diabetes, Metabolic and Nutrition Diseases. 2500 diabetes cases were detected of which 30 new cases pertained to type I diabetes and 2470 to type II diabetes. Data were accessed from individual patient files and transcribed into author's research files.

Key words: diabetes mellitus, prevalence, complications.

INTRODUCTION

Diabetes mellitus is a complex and heterogeneous syndrome induced by genetically or acquired disbalance of insulin secretion or/and by the resistance of the peripheral cells to insulin action which leads to profound modifications of the protein, carbohydrate, lipid, ion and mineral metabolism [1-4]. These modifications cause chronic complications especially at eyes, kidneys, heart and blood vessels.

The classical triade: polyuria, polyphagia and polydipsia are not any longer of diagnostic value due to the fact that the condition initiation is atypical or insidious. This phenomenon explains the emergence of serious, often irreversible complications [5,6].

Diabetes as condition is present worldwide. Its prevalence is continuously growing in the world and is one of the major mortality and morbidity causes [7-9].

Diabetes is one of the most frequent chronic conditions, its prevalence especially of the type II being in expansion and reaching epidemic levels worldwide. The most important causes of the prevalence are: aging of the human population, obesity, sedentary life style, the inadequate diet, urbanization and industrialization [10-12].

Epidemiological research of diabetes mellitus took a rapid pace especially after World War II. Previous attempts led to several conclusions which, at large, could not be tested. The morbidity due to diabetes was based on hospital, polyclinic and private practice statistics which provided unrealistic data due to: intended or unintended bias, impossibility for the interpolation of the obtained information to large population groups, the lack of a unified and objective methodology. For the establishment of a correct morbidity in the case of diabetes as in other conditions too, an active detection is required [12-14].

MATERIAL AND METHOD

The study includes the sum of newly detected type I and II diabetes in Bihor County during 2011. The data was provided by the County Sub-Program for Diabetes, Nutrition and Metabolic Diseases, Bihor County which is a part of the National Health System of Romania. In the activity of the County diabetes ambulatory center, the fundamental and specific unit of data collection is the dispensarization sheet, conceived and legislated by the Health Ministry of Romania. The first part of the observation sheet is permanently sight accessible and offers general information about the patient with appropriate identification data: first and last name, birth date, gender, personal numerical code, address and also the probable inception date of the condition, the certified date of the disease registration by confirmed diagnosis by a specialist in diabetology, social environment, also the confirmed health security status proved by the affiliation to one or several health security systems.

In order to gather and process the data, a personal research sheet was provided to be filled in for every patient separately.

This observation sheet contained the following data:

- The age of the patient
- The gender
- Social environment
- The weight and the height of the patient for the calculation of the body mass index.
- Diabetes mellitus type
- The chosen treatment type: diet, oral, insulin wise or both type treatments
- Chronic microangyopathic complications
- Chronic macroangyopathic complications
- Comorbidity: high blood pressure, dyslipidemia
- Systolic and diastolic arterial pressure.

RESULTS AND DISCUSSION

The study outcome consists in the following results: during 2011, in Bihor county, 2500 new diabetes mellitus cases were detected of which 30 pertained to diabetes type I and 2470 to diabetes type II. From the total of 2500 cases, 1225 were treated with oral anti-diabetes medication (OAD) and 1245 cases were treated with oral anti-diabetes medication and insulin (Table 1).

Table 1

The repartition of diabetes mellitus cases according to medication type, social environment and gender, Bihor county survey 2011.

Medication type	No. of cases	Of which			
		Urban environment	Rural environment	Women	Men
OAD	1225	600	625	600	625
OAD+insulin	1245	560	685	785	460

Concerning the age of the diabetes mellitus type II inception, in Bihor county during 2011, the highest case number was recorded in the 60-70 year age group (Table 2).

Table 2

The repartition of diabetes mellitus cases according to age groups and medication type, Bihor county survey 2011

Medication type	30-40 year	40-50 year	50-60 year	60-70 year	70-80 year	Total no. of cases
OAD	25	175	375	250	400	1225
OAD + insulin	210	25	660	200	150	1245

Connected to chronic complications, most frequently encountered were of macro angiopathic-coronary nature (pectoral angina, myocardial arrest) followed by chronic microangiopathic and neurological complications (diabetes induced neuropathy) (Table 3).

Table 3

The repartition of chronic complications induced by diabetes according to different types of medication, Bihor county survey 2011.

Medication type	No. of cases	Retino-pathy	Neuro-pathy	Nephro-pathy	Cerebral complications (AVC)	Coronary complications
OAD	1225	150	425	50	100	500
OAD + insulin	1245	300	450	175	75	275

As function of weight and height, the index of body mass was calculated for every patient. The index indicated that a greater number of patients with diabetes type II suffered from overweight and various level obesity (Table 4).

Table 4

The repartition of the body mass index according to medication type in patients suffering from diabetes, Bihor county survey 2011.

Medication type	Total no. of cases	Normal weight	overweight	obesity
OAD	1225	125	450	650
OAD + insulin	1245	160	610	475

CONCLUSIONS

- Diabetes mellitus is a major problem for individuals, medicine and society due to the progressive increase of cases worldwide, within all diabetes types and within all age groups.
- The aging of the human population and the modifications associated with urbanization, globalization and development increases the burden set by the diabetes all over the world, especially in the countries with low and average income where the necessary resources in order to face the associated medical problems are scarce.
- Actual and future estimations concerning the weight of diabetes are important for the allocation of the community and health care resources, for stressing the important role of the life style in diabetes emergence and to encourage the counteracting measures against the increasing prevalence trend.
- It is a straightforward link between diabetes, obesity and cardiac problems.

REFERENCES:

1. **Ahmad OB, Boschi-Pinto C, Lopez AD, Murray CL, Lozano R, Inoue M.** Age standardization of rates: a new WHO standard. GPE discussion paper series 31. Geneva, Switzerland: *World Health Organization*; 2001.
2. **Whiting D, Guariguata L, Weil C, Shaw J.** IDF diabetes atlas: global estimates of the prevalence of diabetes for 2011 and 2030. *Diabetes Res Clin Pract* 2011.
3. **Saaty TL.** Analytic hierarchy process. In: Encyclopedia of biostatistics 2nd ed., *John Wiley & Sons, Ltd.*; 2005.
4. **Shaw JE, Sicree RA, Zimmet PZ.** Global estimates of the prevalence of diabetes for 2010 and 2030. *Diabetes Res Clin Prct* 2010;87:4-14.
5. **Danaie G, Finucane MM, Lu Y, Singh GM, Cowan MJ, Paciorek CJ, et al.** National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with 370 country-years and 2-7 million participants. *Lancet* 2011;378:31-40.
6. **[King H, Rewers M.** Global estimates for prevalence of diabetes mellitus and impaired glucose tolerance in adults. WHO Ad Hoc Diabetes Reporting Group. *Diabetes Care* 1993; 16 (January) :157-77.
7. **[Amos AF, McCarty DJ, Zimmet P.** The rising global burden of diabetes and its complications: estimates and projections to the year 2010. *Diabet Med* 1997; 14 (Suppl.5): S1-85.
8. **King H, Aubert RE, Herman WH.** Global burden of diabetes, 1995-2025: prevalence, numerical estimates, and projections. *Diabetes Care* 1998;21(9):1414-31.
9. **Wild S, Roglic G, Green A, Sicree R, King H.** Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. *Diabetes Care* 2004;27(5):1047-53.
10. **Danaei G, Finucane MM, Lu Y, Singh GM, Cowan MJ, Paciorek CJ, et al.** National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with 370 country-years and 2. 7 million participants. *Lancet* 2011;378(July):31-40.
11. **International Diabetes Federation.** *Diabetes atlas, 1 st ed., Brussels, Belgium:* International Diabetes Federation; 2000.
12. **International Diabetes Federation.** *Diabetes atlas, 2 nd ed., Brussels, Belgium:* International Diabetes Federation; 2003.
13. **International Diabetes Federation.** *Diabetes Atlas, 3 rd ed., Brussels, Belgium:* International Diabetes Federation; 2006.
14. **International Diabetes Federation.** *IDF Diabetes Atlas, 4 th ed., Brussels, Belgium:* International Diabetes Federation; 2009.

