



ELSEVIER

Contents lists available at ScienceDirect

Primary Care Diabetes

journal homepage: <http://www.elsevier.com/locate/pcd>PCDE
primary care diabetes europe

Original research

Factors associated with non-adherence among type 2 diabetic patients in primary care setting in eastern Bosnia and Herzegovina

Olga Horvat^{a,*}, Jelena Popržen^b, Ana Tomas^a, Milica Paut Kusturica^a,
Zdenko Tomić^a, Ana Sabo^a

^a Department of Pharmacology and Toxicology, Faculty of Medicine Novi Sad, University of Novi Sad, Hajduk Veljkova 3, 21000 Novi Sad, Serbia

^b Health Institution Moja apoteka, Cara Dušana bb., 73 300 Foča, Bosnia and Herzegovina

ARTICLE INFO

Article history:

Received 7 June 2017

Received in revised form

3 October 2017

Accepted 8 October 2017

Available online xxx

Keywords:

Non-adherence

Diabetes Mellitus

Primary care

Factors

ABSTRACT

Aims: The aims of this study were to assess patients' non-adherence and associated factors to antidiabetic medication in the primary care setting in the eastern part of Bosnia and Herzegovina (BiH).

Methods: We conducted a retrospective chart review of 323 patients with type 2 diabetes mellitus (T2DM) attending the primary health care center of the Foča municipality in eastern part of BiH and measured adherence to antidiabetic medication. Adherence was measured using a pill count method.

Results: The majority of patients were treated with oral therapy (84.21%). Half of the patients (48%) treated pharmacologically were non-adherent and patients on oral and insulin combination therapy showed better adherence than those on oral therapy. Age ($B = -0.749$; $p = 0.004$), copayment ($B = 0.549$; $p = 0.028$) and oral therapy ($B = 0.827$; $p = 0.045$) were the strongest predictors of poor adherence.

Conclusion: About half of the patients were non-adherent to antidiabetic medication. Interventions oriented towards policy changes regarding availability of antidiabetic medication through copayment reductions, and providing health education to younger population and patients on oral therapy could lead to better adherence among T2DM patients in eastern part of BiH.

© 2017 Primary Care Diabetes Europe. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Diabetes mellitus (DM) was estimated to affect at least 366 million by the year 2030, but recent data from the International

Diabetes Federation (IDF) suggest that previous estimates have already been exceeded, with a prevalence of 415 million in 2015 [1]. According to the IDF data, BiH is the country with one of the highest DM prevalence in Europe (9.9%). Given the high morbidity and mortality associated to the disease, primarily due to macrovascular as well as microvascular complications, T2DM (type 2 diabetes mellitus) is a major public-health concern. These complications have been shown to be associated with the reduced quality of life but also with increased

* Corresponding author.

E-mail address: olga.horvat@mf.uns.ac.rs (O. Horvat).

<https://doi.org/10.1016/j.pcd.2017.10.002>

1751-9918/© 2017 Primary Care Diabetes Europe. Published by Elsevier Ltd. All rights reserved.

risk of premature death in patients with T2DM in BiH [2,3]. Despite the presence of effective antidiabetic drug therapy, the problem of non-adherence to pharmacotherapy as well as other aspects of diabetes care are particularly common among patients with T2DM [4–6]. Medication non-adherence has been linked with poorer treatment outcomes, disease progression, complications, increase in health services utilization and hospital admissions [7].

The factors associated with non-adherence reported in the literature are classified as: patient-centered, therapy oriented and health care system related [8,9]. The patient oriented factors can be demographic characteristics including age, gender, educational level, marital status and employment and psychological factors involving motivation towards therapy taking, patient knowledge and their relationship to prescriber. The therapy-related factors include duration and complexity of treatment, type of medications, side-effects and route of administration. The factors associated with the health care system include accessibility of health care and interaction between patient and provider.

Numerous studies determining the level of adherence and potential risk factors of non-adherence to medications, yielded contrasting results, due to variation of study designs and sample populations [8,10–12]. Frequently cited factors vary from demographic characteristics such as age [13–20], gender [8,21] and level of education [8,21] to clinical and medication related factors such as duration of diabetes [8], presence of comorbidity [16,19], medication related side effects [22,23] and complexity of treatment [24,25]. Patient copayment was also frequently reported to be associated with patient adherence to antidiabetic therapy [9,26].

However, there is a scarcity of literature on adherence to antidiabetic therapy and factors that may be associated with non-adherence to diabetic treatment in southeastern Europe, and to the best of our knowledge, there is no complete data for the population of BiH. Therefore, this study was carried out to determine patients' adherence to antidiabetic medication and associated factors so as to guide interventions for improving adherence to antidiabetic medications.

2. Methods

2.1. Study setting, respondents and data collection

The study was conducted at the primary health care center in Foča municipality (with a total population 19,811 according to the 2013 census) in the eastern part of the Republika Srpska, BiH [26]. This primary health care center operates only outpatients. Outpatients attend the center at scheduled times throughout the week and receive free medical care including laboratory tests when available. The survey protocol was approved by the Ethics Committee of University of Novi Sad on 08.05.2014.

Respondents were all patients with T2DM, aged at least 20 years, attending the health care center who gave informed consent to participate in the study. We excluded those with acute diseases during the survey period, those who had a diagnosis of type 2 diabetes less for than two years (based on an International Statistical Classification of Diseases, 10th Revi-

sion code E11) as well as respondents who were treated only with dietary modification.

Out of the 464 registered patients with T2DM, a total of 323 patients who visited their primary care physician between 1st January and 31st December 2015 in this health care center were recruited during their regular appointments. Trained interviewers used pretested semi-structured questionnaires to collect information on age, gender, educational level, marital status, employment, smoking. Patient data were extracted from the health-care records: diabetes duration, fasting blood glucose (FBG) reading (FBG levels were calculated from the three last available recordings, with the target value for normal glycaemia <6.1 mmol/L), number of medicines, frequency of dosing, and type of antidiabetic therapy: for oral drugs – drug brand name, dosage, dosage frequency, and for insulins – strength and the amount of insulin (number of insulin pens, volume of each pen, number of insulin units per day, frequency of dosing). Patients were grouped into three treatment categories – oral, insulin, oral + insulin. After collection of the above mentioned data, the interviewer arranged a first home visit to measure adherence to antidiabetic medication.

2.2. Measure of medication adherence

To determine the medication adherence, patients were visited at two separate occasions. A time period of two different occasions of the home visit was one month for all participants. During each visit, the researcher asked to see the patient's medication and performed unwitnessed pill counts and noted the volume of insulin. All patients with DM type 2 in our study received insulin therapy via prefilled insulin pens with a volume of 3 mL in a package of 5 pens with a total of 1500 units. The percentage of adherence was calculated by dividing the difference in the number of pills (volume of insulin) recorded in the first home visit and the number of pills (volume of insulin) remaining in the package (insulin pen) at the second home visit with the number of pills (volume of insulin) prescribed for the interval, according to the medical records. The result was multiplied by 100. If 2 or more drugs were prescribed to the patient, the adherence was calculated for each drug individually and expressed as average.

Treatment adherence was analyzed by grouping patients according to the classification proposed by Mason et al. [27]. Accordingly, patients were classified as adherent when 90–105% of the prescribed medication was taken, whereas patients that took <90% or >105% were classified as non-adherent.

2.3. Statistical analysis

The prevalence of non-adherence with regard to patients, clinical, economical and medication related characteristics were analyzed using descriptive statistics and methods for testing statistical hypotheses. From descriptive methods, measures of central tendency (\bar{x}), measures of variability (SD) and frequencies were used. For testing the hypotheses, χ^2 test was used to test the difference in frequencies between groups and Man-Whitney test for variables with non-parametric distribution. The relationship between factors and non-adherence was determined with multivariable logistic regression analy-

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات