

UNIVERSITY OF MEDICINE AND PHARMACY OF TÂRGU MUREŞ
FACULTY OF MEDICINE
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**THE ANALYSIS OF SOME PREDISPOSING
FACTORS OF DIABETES MELLITUS
PERIPHERAL NEUROPATHY**

SUMMARY

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INTRODUCTION

Diabetes is a global health problem affecting children, adolescents and adults evolving in parallel with the aging population and increasing life expectancy, early diagnosis of disease, unhealthy lifestyle, the transition to a Western-style diet (refined foods and saturated fat) with increased prevalence of physical inactivity and overweight / obesity. Over 90% of these patients had type 2 diabetes.

Data obtained in 2008 from the National Health Insurance shows that 538,648 people received antihyperglycemic therapy [4]. The growing number of patients with diabetes increases the number of people with chronic complications, including diabetic peripheral neuropathy.

Since there is no curable treatment for diabetic neuropathy, the screening is important, primary prevention, early diagnosis to slow its progression.

Analysis of the casuistic material:

In this thesis we conducted two different studies.

1. To study the frequency and clinical stages of diabetic peripheral neuropathy, epidemiological profile and correlation with putative risk factors, we performed a cross-sectional study (cross-over) that eventually included 248 patients with type 1 diabetes and type 2 diabetes.
2. For the study of peripheral diabetic neuropathy interrelationship of ACE and VEGF gene polymorphisms we performed a case-control study that included 84 patients with type 2 DM diagnosed with diabetic peripheral sensorimotor polyneuropathy and 90 healthy volunteers.

Study no. 1. Purpose and objectives.

The study aimed to analyze epidemiological data about the frequency of diabetic peripheral neuropathy, its correlation with other possible risk factors associated with it. We have the following objectives:

Evaluation of the frequency of polyneuropathy in patients with diabetes in the study group, diabetic peripheral polyneuropathy frequency estimation staging, determination of its association in relation to age, sex, social status of the patient, area of origin, type of diabetes, age diabetes treatment regimen applied, the identification of modifiable risk factors, assessment of aggravating risk factors of diabetic PNP.

Material and method.

The first study is a cross-sectional study (cross-over) that included 248 patients with type 1 diabetes and type 2 diabetes who have signed an informed consent, they completed a single sheet of outpatient screening and were investigated. The diagnosis of diabetic peripheral neuropathy was

established after medical history, general clinical examination, and neurological clinical examination and confirmed by electroneurophysiological studies. For simplicity and proper correlation with electrophysiological tests in our study we used clinical staging according Toronto Clinical Scoring System with 4 stages of development: 0, 1, 2 and 3.

Study no. 2. Purpose and objectives.

The aim is to apply the first time in Romania molecular genetic analyses in a group of patients with established type 2 diabetes and diabetic peripheral neuropathy and a control group and the objectives are to study the polymorphism I / D ACE gene and VEGF correlated with peripheral diabetic polyneuropathy.

Material and method.

The second case-control study consists of a group of 84 patients with type 2 diabetes and diabetic PNP diagnosed by clinical neurological examination and electrophysiological nerve conduction studies and a control group of 90 healthy volunteers. In order to isolate genomic DNA, the Genomic DNA Purification Research extraction kit from Zymo was used. Amplification in vitro of DNA sequences took place through polymerase chain reaction. Amplification in vitro of a DNA fragment is based on the principle of a primer extension ("primer or PCR amplicon"). DNA fragments were separated by electrophoresis gel. Visualization and interpretation agarose gels were performed using the photodocumenting system Vilbert Lourmat.

Results.

Study no. 1: 8.5% had type 1 diabetes and 91.5% had type 2 diabetes. Overall prevalence of overt diabetic PNP was 47.1%. Women represented 51.2% and 48.8% men, 39.5% were of unsatisfactory socio-economic status and 60.5% were average and above average status. Smoking prevalence is 28.9% and the 28.2% alcohol, 77% had weight problems, 71.8% were hypertensive and 69.0% had dyslipidemia.

Study no. 2: Frequency of D allele of ACE and VEGF was significantly higher in patients with diabetic peripheral neuropathy.

Conclusions

Study no. 1: there are many statistically significant associations with risk factors presumption of diabetic PNP.

Study no. 2: There is a positive association between polymorphism I / D ACE gene and VEGF and the presence of diabetic PNP.