

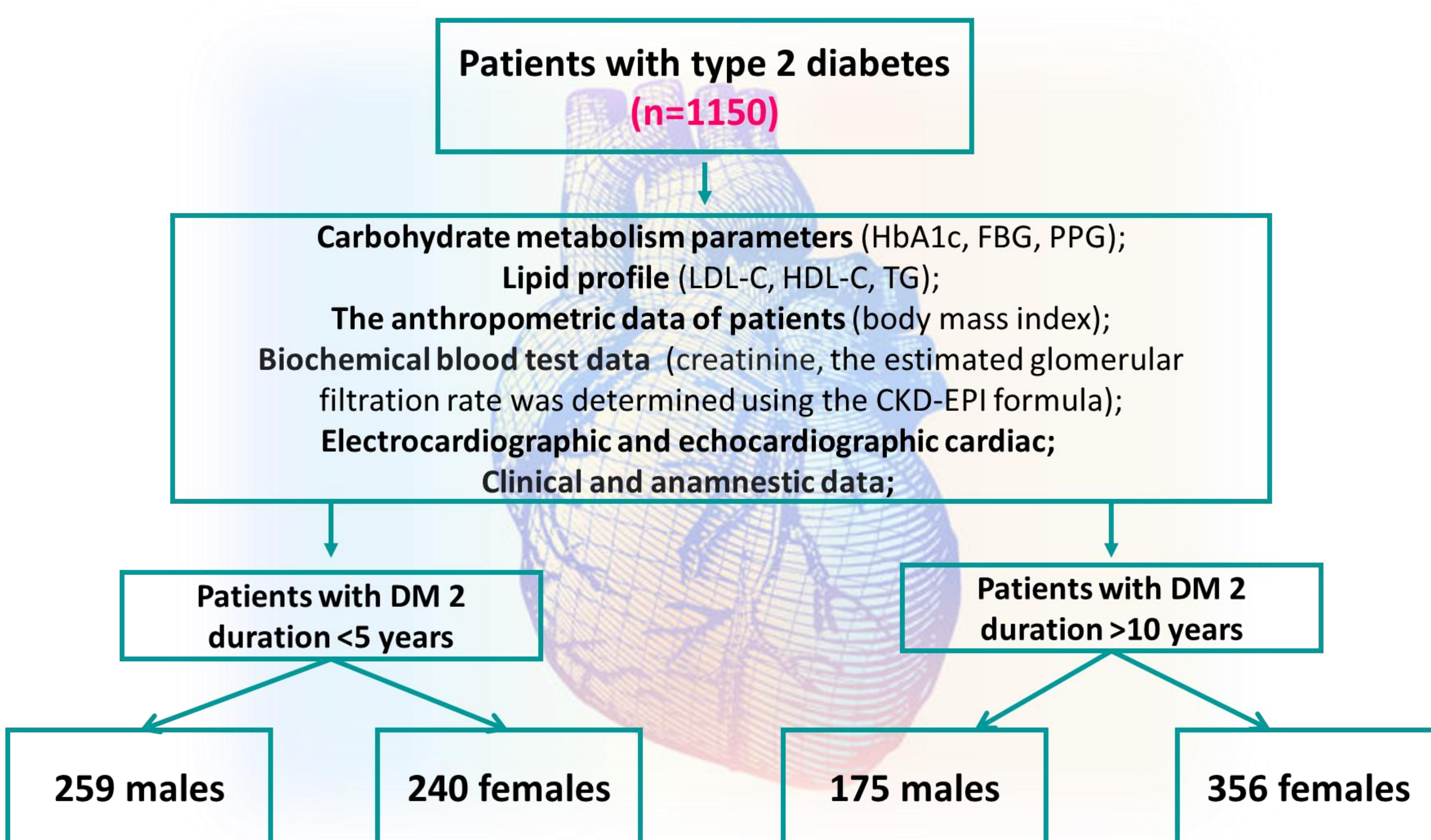
INTRODUCTION

Type 2 diabetes mellitus (DM 2) is one of the significant risk factors for the development of cardiorenal pathology.

The aim: To study the prevalence of atherosclerotic CVD (ASCVD), CKD, CHF in patients with different duration of DM 2 hospitalized for inpatient treatment, and to identify predictors of their early development and progression.

MATERIALS AND METHODS

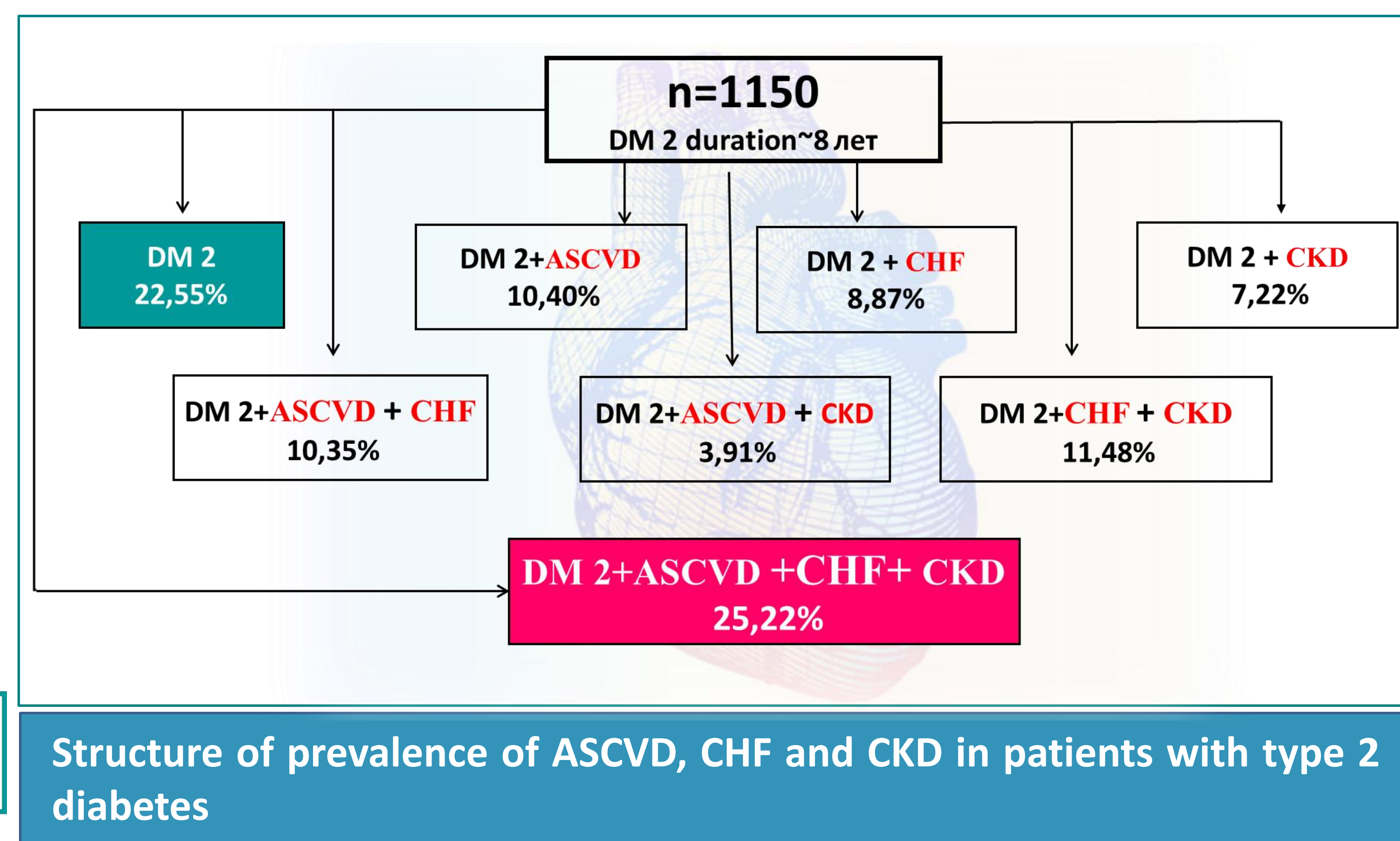
Study design



The study included 1150 patients with DM 2 (483 males and 667 females) hospitalized in V.P. Demikhov City Clinical Hospital in the period 2020–2021. All patients underwent standard clinical, laboratory and instrumental examinations, as well as therapy correction. To assess the role of DM in the development of cardiorenal pathology, all patients were stratified into two groups according to the duration of the disease: group 1 included patients with DM 2 <5 years, group 2 included patients with DM 2 >10 years. Carbohydrate metabolism parameters were analyzed by the level of glycosylated hemoglobin (HbA1c), fasting blood glucose (FBG) and postprandial glucose (PPG). Lipid profile was assessed by low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C) and triglycerides (TG). The anthropometric data of patients (body mass index) were also assessed, and the estimated glomerular filtration rate was determined using the CKD-EPI formula. Electrocardiographic and echocardiographic cardiac examination were performed. Statistical data processing was performed using the statistical software package "Excel" ("Microsoft"), the program "Statistica 10" ("Statsoft Inc").

RESULTS

The mean age of the patients was 65 [57; 74] years, median BMI was 31,2 [26,3; 35,8] kg/m². The mean HbA1c was 9,6 [7,9; 10,9] %, 88,6% of patients had HbA1c >7%. The median fasting blood glucose was 7,6 [6,4; 9,2] mmol/l, postprandial glucose – 11,4 [9,7; 14] mmol/l. Dyslipidemia was recorded in 69,8% of study participants. Of the total number of patients with DM 2 87,6% had hypertension, 56% – CHF (43,91% – CHF with preserved EF, 12,09% – CHF with moderately reduced or reduced EF), 49,9% - ASCVD (MI - 24,7%, stroke – 18,9%, diseases of the arteries of the lower extremities – 17%, angina pectoris – 6%). The most significant predictors of ASCVD, CKD, and CHF were age >60 years, duration of DM, hypertension and CKD. The male gender was associated with an increased chance of developing ASCVD, while the female gender was associated with CHF and CKD.



Structure of prevalence of ASCVD, CHF and CKD in patients with type 2 diabetes

Diseases	DM 2 duration	
	< 5 years	> 10 years
DM 2	35,67 %	10,73 %
DM 2+ASCVD	10,02 %	9,79 %
DM 2+ASCVD + CKD	2,81 %	4,52 %
DM 2+ASCVD + CHF	7,82 %	12,62 %
DM 2 + CKD	9,42 %	6,97 %
DM 2 + CHF	7,82 %	7,72 %
DM 2+CHF + CKD	10,82 %	12,26 %
DM 2+ASCVD +CHF+ CKD	15,63 %	35,39 %

Structure of prevalence of ASCVD, CHF and CKD in patients with type 2 diabetes depending on duration

CONCLUSIONS

Among the studied patients, there was a high incidence of ASCVD, CHF and CKD, regardless of the duration of DM. There was a high prevalence of the main risk factors for CVD: high levels of HbA1c, hypertension, obesity and dyslipidemia. Based on the analysis, risk factors associated with complications from the cardiovascular and renal systems in this cohort of patients were established.