

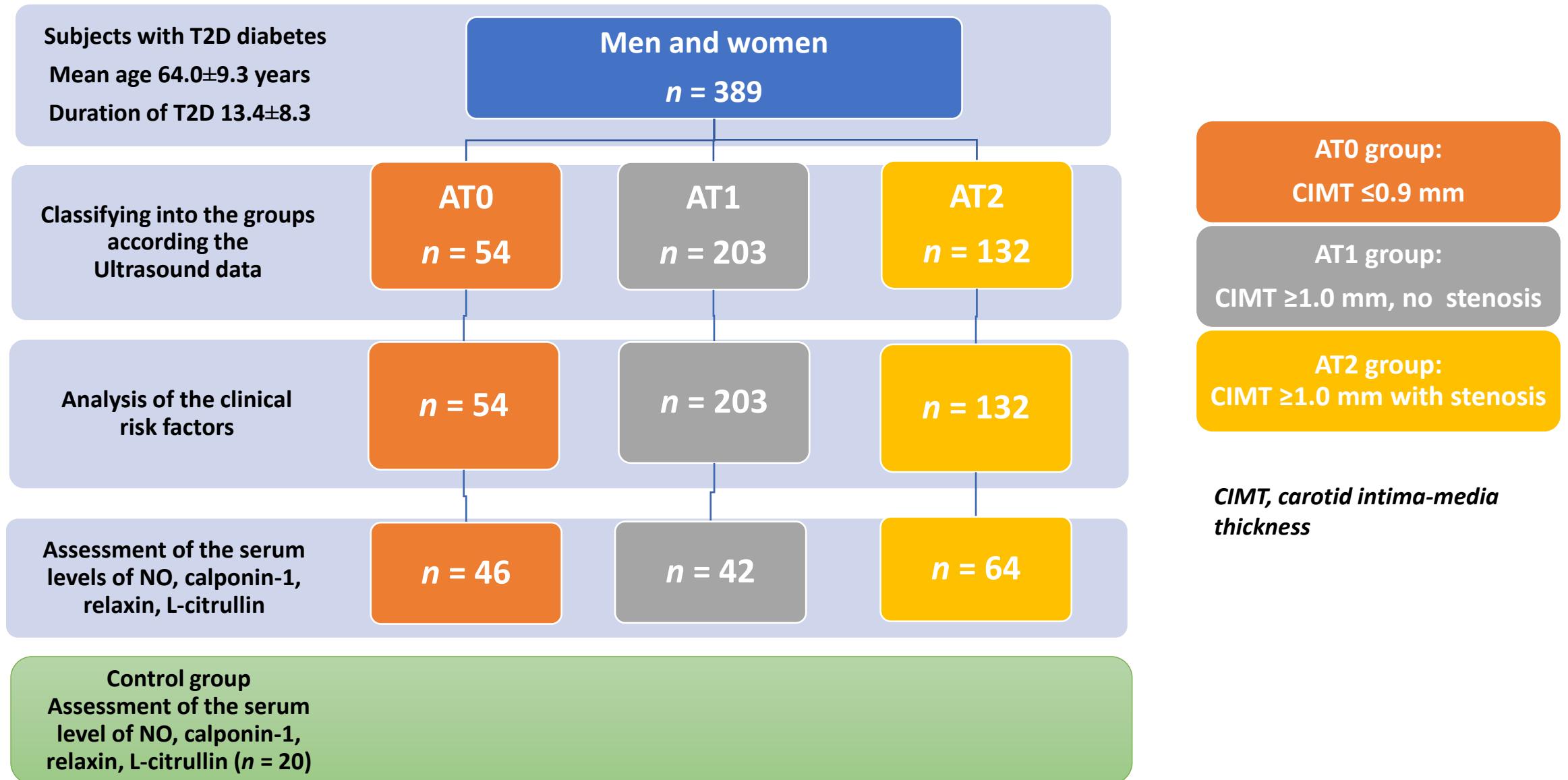
The prevalence and risk factors of carotid artery stenosis in type 2 diabetic patients

Elena Koroleva, Alexandr Lykov, Rustam Khapaev, Vadim Klimontov

*Research Institute of Clinical and Experimental Lymphology – Branch of the Institute of
Cytology and Genetics,
Siberian Branch of Russian Academy of Sciences*

*(RICEI – Branch of IC&G SB RAS)
Novosibirsk, Russia*

The design of the study

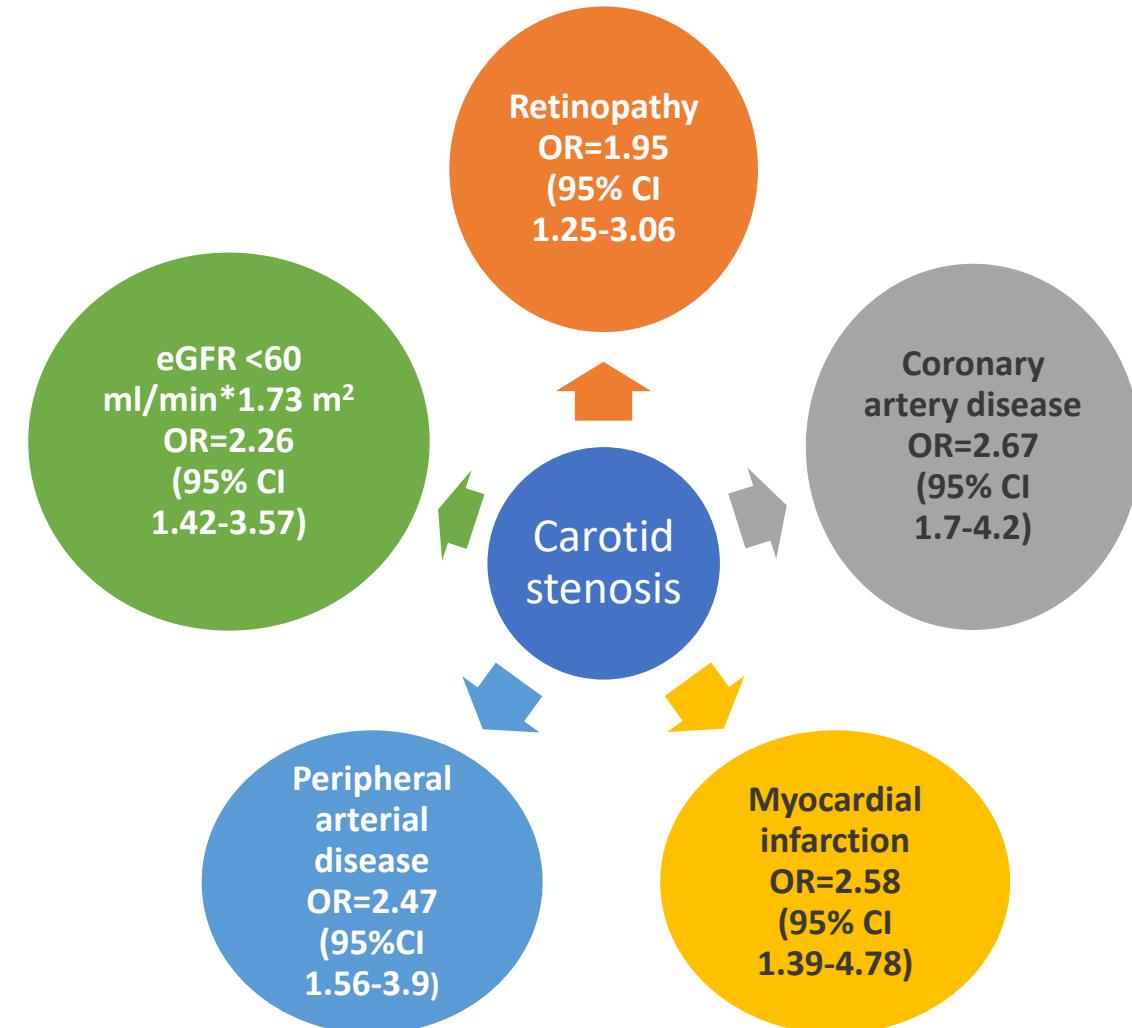


Clinical and laboratory data of T2D patients depending on carotid atherosclerosis

Variable	AT0 group N = 54	AT1 group N = 203	AT2 group N = 132	P
Sex, m/f	9/45	60/143	43/89	0.22 ^b
Age, years	56.8±9,5	63.46±9.02	67.5 ± 8.07	<0.0001 ^a
Diabetes duration, years	10.1±6.9	12.8±7.7	14.8±8.8	0.043 ^a
BMI, kg/m ²	38.1±8.3	33.5±6.2	32.8±5.5	0.023 ^a
HbA1c, %	8.1±2.1	8.7±1.9	8.6±2.1	0.39 ^a
Cholesterol, mmol/l	5.3±1.1	5.3±1.5	5.2±1.6	0.099 ^a
Triglycerides, mmol/l	2.64±1.66	2.45±2.1	3.15±1.2	0.55 ^a
LDL-c, mmol/l	3.35±0.82	3.3±1.03	3.3±1.16	0.63 ^a
HDL-c, mmol/l	1.19±0.3	1.22±0.32	1.23±0.46	0.99 ^a
eGFR, ml/min/1.73 m ²	74.6±21.1	70.4±18.9	63.5±17.4	0.035 ^a
UACR, mg/mmol	3.96±13.63	7.94±26.9	16.05±46.8	0.52 ^a
Left-CIMT, mm	0.72±0.15	1.37±0.47	2.48±0.93	<0.0001 ^a
Right-CIMT, mm	0.72±0.14	1.34±0.53	2.75±0.9	<0.0001 ^a
Arterial hypertension, yes, %	92.5	97.0	98.5	0.064 ^b
Hypertension duration, years	14.7±9.2	16.6±11.7	20.9±13.1	0.02 ^a
CAD, yes, %	17.0	33.0	56.8	0.001 ^b
PAD, yes, %	11.3	45.2	66.7	0.012 ^b
Diabetic retinopathy, %	35.8	47.3	63.6	0.004 ^b
CKD, %	64.2	76.4	87.1	0.002 ^b
Smoking, %	13.2	9.4	13.6	0.006 ^b
Insulin therapy, %	54.9	59.6	68.9	0.27 ^b
Dyslipidemia, %	90.6	96.6	98.5	0.066 ^b
Statin therapy, %	28.8	43.3	53.0	0.006 ^b

BMI, body mass index; HbA1c, glycated hemoglobin A1c; LDL-c, low density lipoprotein cholesterol; HDL-c, high density lipoprotein cholesterol; eGFR, estimated glomerular filtration rate; UACR, urinary albumin-to-creatinine ratio; CAD, coronary artery disease; PAD, peripheral arterial disease; CKD, chronic kidney disease.

^a Kruskal-Wallis-test ^b Chi-square test



The associations of carotid artery stenosis with other vascular complications in T2D patients

The risk factors for carotid artery stenosis in T2D patients

Parameter	OR	CI 95%	P
Age >65 years	4.8	2.6 – 9.4	<0.05
T2D duration > 15 years	2.8	1.4 – 5.4	<0.05
HbA1c >7,5 %	2.9	1.6 – 5.2	<0.05
eGFR < 60 ml/min*1,73 m ²	2.1	1.0 – 4.3	<0.05
CAD	4.0	1.8 – 8.8	<0.05
Myocardial infarction	8.9	1.2 – 65.5	<0.05

Conclusions

- In our cohort of T2D diabetic patients, the prevalence of carotid artery stenosis is found to be 33.9%.
- The presence of carotid stenosis is associated with diabetic retinopathy, reduced renal function, PAD, CAD and myocardial infarction in anamnesis.
- Age, diabetes duration, and high serum NO levels are the most reliable risk factors for carotid stenosis in T2D patients

The serum levels of atherosclerosis markers in T2D patients with and without carotid stenosis

