



# Predictors of carotid atherosclerosis progression in diabetic patients: evidences from ultrasonography laboratory

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**INTRODUCTION:** Diabetes mellitus is one of the principal vascular risk factor involved in the pathogenesis of atherosclerotic large vessel disease. Given the high prevalence of preclinical atherosclerosis<sup>1,2</sup>, among screening examination, diabetic patients routinely undergo carotid ultrasonography. The purpose of this study was to investigate the **role of risk factors in predicting a worsening carotid atherosclerosis at ultrasonographic follow-up** and, therefore, in the progression of large vessels disease.

**RESULTS:** data from 96 patients (63 males and 33 females, mean age 63 years) were collected. The mean follow-up period was 30 months (range 1-108). The most frequent vascular risk factors were hypertension and hypercholesterolemia, while the other reported condition were smoke, obesity, previous myocardial infarction, stroke or carotid surgical treatment. Analyzing the relationship to a worsening carotid stenosis, we found higher odds ratios for **hypertension (2.96), previous stroke (2.26), previous carotid surgical treatment (1.75)** and **smoke (1.67)** rather than sex, obesity, hypercholesterolemia and previous myocardial infarction. Moreover, the worsening of carotid atherosclerosis at follow-up was not proportional to the follow-up period (40% of worsening for 1 to 4 years of follow-up). Interestingly, being younger than mean age had a significant correlation with a worsening of carotid atherosclerosis (odds ratio 1.6).

**METHODS:** this was a retrospective population study aimed to enroll all the **diabetic outpatients that underwent at least two carotid ultrasonography** at our laboratory from 2003 to 2014. Demographic data, vascular risk factors, as well as follow-up period were analyzed in order to point out a correlation with the variation of carotid atherosclerosis at ultrasonographic control.

months of follow-up	total patients	worsened	stable
0-12	14	5	9
13-24	37	15	22
25-36	24	9	15
37-48	11	5	6
49-	13	5	8
0-24	51	20	31
25-48	35	14	21

Risk factor	ODDS Ratio
hypertension	2,96
stroke	2,26
TEA	1,75
smoke	1,67
obesity	1,38
hyperlipidemia	1,09
heart infarct	1,08

**DISCUSSION AND CONCLUSIONS:** our results confirmed the importance of the carotid ultrasonographic follow-up in monitoring and managing large vessels disease. **Hypertension, previous stroke and smoke resulted the risk factors best predicting a worsening of carotid atherosclerosis at follow-up**, thus highlighting their pivotal role in thrombotic pathogenesis<sup>3,4</sup>. **In such diabetic patients a strict follow-up should be planned, even in absence of a significant carotid atherosclerosis at baseline.**

#### References

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