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CAROTID INTIMA MEDIA THICKNESS (IMT) AND IMT-PROGRESSION AS PREDICTORS OF VASCULAR EVENTS IN A HIGH RISK EUROPEAN POPULATION: "THE IMPROVE STUDY"

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The IMT of carotid arteries, assessed by B-mode ultrasound, is associated with atherosclerosis risk factors and with the prevalence and extent of coronary atherosclerosis. In addition IMT is a good predictor of new myocardial infarction and stroke. On this basis, IMT has been proposed as a surrogate index of atherosclerosis of other vascular regions. Little is known, however, about the relationship between IMT-progression, the real and point used in pharmacological studies, and vascular events. Attempts to delay IMT-progression using "anti-atherosclerotic" agents provided encouraging results. However, no studies have been able to address, prospectively, whether IMT-progression reflets the efficacy of treatments in reducing the rate of vascular events. The IMPROVE study, a currently on going prospective multicenter, longitudinal, long-term, observational study, funded by EU, will evaluate the association between IMT, IMT-progression and the rate of new vascular events in subjects at high risk of atherosclerosis. The effect of genes' polymorphism, lipid peroxidation, socio-economic and psychological variables will be also evaluated. 3600 patients will be recruited in 7 European countries and followed for 36 months. Data will be analysed with conventional statistics and with artificial neural networks. The study will be considered as positive if a difference of at least 3% in the cumulative incidence of acute vascular events between the lowest and the highest quintiles of IMT or IMT-progression will be detected. A summary of aims and design of the study will be presented.

RELATIONSHIP BETWEEN CAROTID GLOBAL RISK IN PRIMARY AND SECONDARY PREVENTION AND CAROTID ATHEROSCLEROSIS


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Clinical and epidemiological studies have provided mathematical algorithms based on vascular risk factors useful to estimate the 10 years global risk of vascular events. Although derived by selected populations, these algorithms are often used in clinical practice to estimate the individual risk of patients with quite different characteristics. In the present study we have investigated whether the Framingham Risk Score (FRS) and the GISSI Risk Score (GRS), two algorithms useful to calculate the individual global risk in primary and secondary prevention, are associated with carotid artery intima media thickness (IMT) and IMT-progression, two parameters widely accepted as indexes of carotid and even coronary atherosclerosis. 1205 asymptomatic and 262 symptomatic patients have been recruited to investigate the association with cross-sectional IMT. 312 asymptomatic and 52 in secondary prevention patients with at least 5 years of follow-up have been recruited to investigate how FRS and GRS affect the IMT-progression. While cross-sectional IMT significantly increases with the raising of quartiles of global risk of patients in both primary and secondary prevention (both p<0.0001; 4th vs 1st quartiles), IMT-progression is not affected by the individual global risk both in primary (FRS) and in secondary prevention (GRS). The positive association between FRS, GRS and IMT suggests that both these algorithms reflect the individual atherosclerotic pattern also in an Italian population of patients attending a Lipid Clinic.