Vessels and Endothelium

12.4 Effects of Triglyceridaemia on Carotid Wall Thickness in Treated Essential Hypertension

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Introduction. Age, blood pressure (BP) and serum total cholesterol have been shown to correlate with the number and size of atherosclerotic lesions. Less is known however, on whether serum triglycerides also participate in the determination of atherosclerosis, particularly in subjects in whom BP is reasonably well controlled by treatment and total cholesterol is not increased.

Methods. We studied 292 consecutive hypertensive non diabetic patients (187 males, age 19-86 years) on treatment with several anti-hypertensive drugs in various combinations and dosages. Intima-media thickness (IMT) was measured at the common carotid artery level by an echocolor-Doppler device (Phillips Sonos 7500). Other measurements consisted of blood pressure (sphygmomanometry), heart rate (HR, palpatory method) body mass index (BMI), serum total cholesterol, LDL-cholesterol, triglycerides.

Results. In the group as a whole, mean age ($\pm$ SE) was 54.3 ± 0.8 years, BMI 26 ± 0.2 g/m², BP (systolic/diastolic) $142 \pm 1/86 \pm 0.6$ mmHg, HR 65 ± 0.5 b/min, and serum total cholesterol, LDL cholesterol and triglycerides, 197 ± 2 , 116 ± 2 and 129 ± 5 mg/dl, respectively. Mean carotid IMT was 0.68 ± 0.01 mm and its individual values showed a significant correlation with age ($r=0.54$, $p<0.0001$), systolic BP ($r=0.23$, $p<0.0001$), total cholesterol ($r=0.15$ $p=0.006$) and triglycerides ($r=0.20$, $p=0.0004$) although not with LDL cholesterol ($r=0.09$, NS). The correlation between IMT and triglycerides remained significant ($p<0.05$) when a stepwise multivariate analysis including all variables showing a significant correlation in the bivariate analysis was performed.

Conclusions. In hypertensive patients in whom BP is reasonably well controlled by treatment and total serum cholesterol is not increased, carotid wall thickness is independently related to triglycerides suggesting that under these circumstances triglycerides have an impact on determination of sub-clinical atherosclerosis.