

**EXAMINATION OF THE SEVERITY AND
CLINICOPATHOLOGICAL FEATURES OF
ATHEROSCLEROSIS IN STROKE PATIENTS**

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Our examinations were performed on patients with severe acute ischemic stroke. A comparative clinico-pathological approach was applied. Cardiovascular risk factor screening, serological marker analysis of *Chlamydia pneumoniae* infection, and common carotid artery intima-media thickness measurements were performed *in vivo*. The presence of *Chlamydia pneumoniae* in the carotid plaques, localisation and quantity of calcium accumulation were examined *post mortem*. Further on, the atherosclerotic changes of the carotid, femoral and coronary arteries were analyzed and compared.

➔ In the comparison of IMT, Chlamydia infection and carotid atherosclerosis, good correlation was found between *in vivo* common carotid IMT and post mortem measured average wall thickness data of the common and external carotid arteries. Systemic markers of *Chlamydia pneumoniae* infection (IgG and IgA antibodies) did not show correlation with the *in vivo* markers of the common carotid artery atherosclerosis (IMT and its irregularity). Local presence of the Chlamydial DNA correlated neither with presence of IgA nor with that of IgG antibodies. Further on, presence of Chlamydial DNA was independent of either *in vivo* or post mortem morphological markers of atherosclerosis. *In spite of a high detectability rate, Chlamydia pneumoniae infection did not correlate with the severity of atherosclerosis. Therefore our study does not support the link between Chlamydia infection and atherosclerosis.*

➔ In the study comparing arterial wall calcium content and IMT, we were the first to compare ultrasonographically measured IMT and elementary calcium distributional maps in post mortem specimens determined by the PIXE method. *Early calcium accumulation was detected in the media layer of the carotid arteries and significant correlation was found between the calcium content of the arterial wall and IMT measured on the identical arterial segments.*

➔ Results of the study comparing the atherosclerotic burden of the different arterial regions suggest that besides the IMT measurement of common carotid artery, which is frequently used as an early indicator of coronary disease, other vessels should also be considered as indicators of global atherosclerosis. *In our opinion, external carotid and femoral arteries are as or even more sensitive atherosclerosis markers than the common carotid artery.*

Keywords: Chlamydia pneumoniae, Carotid arteries, Coronary arteries, Femoral arteries, Intima-media thickness, Calcification, Particle induced X-ray emission, Ischemic stroke, Atherosclerosis