

Children with chronic renal failure are at extremely high risk of premature cardiovascular disease. In our work, we have shown that the measurement of carotis intima-media thickness (CIMT) with high resolution ultrasound is a suitable method for the diagnosis of early atherosclerotic changes especially in younger children. In contrast, flow mediated dilatation (FMD) according to our experience is not very suitable method for investigations in pediatrics because of its high variability.

In our group of patients we did not find correlation of preclinical atherosclerosis measured by CIMT with any of the traditional cardiovascular risk factors (hypertension, dyslipidemia, overweight expressed as body mass index).

In contrast, a significant negative correlation was found in the ESRD patients between the CIMT and serum bilirubin and albumin. On the one hand, these findings could indicate an impaired defending mechanisms against oxidative stress, which are considered one of the key factors in the development of atherosclerotic process, on the other hand they indicated an important role played by nutritional status in children with ESRD.

In addition, we found strong evidence for significant correlations between CIMT and proteinuria as another discussed cardiovascular risk factor in boys, but not in girls. To our knowledge, this finding and possible gender differences already in childhood were not systematically studied so far in contrast to adult populations.