ASSOCIATION BETWEEN EYE VASCULATURE ALTERATIONS AND RENAL DAMAGE IN ESSENTIAL HYPERTENSIVES WITH METABOLIC SYNDROME

ACC Poster Contributions
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Background: In the ongoing debate about metabolic syndrome (MS), it is still unresolved whether it is a marker or a mechanism. We sought to unravel the mystery of the interrelationships of the hypertensive fundus, a time honored target organ damage (TOD), especially in the setting of MS. We hypothesized that there might be an association between retinal alterations and the other parameters of target organ damage, such as renal dysfunction and inflammatory activation.

Methods: Our population consisted of 202 consecutive subjects with newly diagnosed untreated stage I-II essential hypertension (aged 60±11 years, 122 female), without overt cardiovascular disease. All participants underwent fundoscopy examination and were classified according to Scheie's grading system into 5 categories (Scheie's scale 0, I, II, III, IV: normal, arteriolar narrowing, arteriovenous nipping, hemorrhages - exudates and pappiloedema respectively). Anthropometric parameters, as well as lipid profile, plasma glucose, high sensitivity C-reactive protein (hs-CRP) and serum creatinine levels were assessed. Renal function was classified according to the estimated glomerular filtration rate (GFR) calculated by the Cockroft-Gault formula. MS was identified according to the Third Report of the National Cholesterol Education Program Adult Treatment Panel. The subjects were divided in two groups regarding the absence (group A), or the presence of MS (Group B).

Results: Group B compared to group A had increased levels of uric acid and hs-CRP (5.5±0.33 vs 4.5±0.27 mg/dl and 2.9±0.18 vs 1.6±0.11 mg/dl respectively, all p<0.05) and significantly lower GFR (81±5 vs 96±7 ml/min, p<0.05). The two groups did not differ regarding age, sex and office blood pressure. In each of the five Scheie's categories there was a significant divergence, within the categories, in the constellation of MS components, presenting a prevalence of 6%, 14%, 47%, 71% and 62%, respectively (p<0.05).

Conclusions: The metabolic syndrome, although not an established pathogenetic entity, is associated with marked acceleration of the hypertensive retinal damage, kidney dysfunction and inflammatory activation.