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U. Linnenkamp, L. Makaroff, L. Guariguata, J. Beagley, D. Whiting, N.H. Cho, Belgium, UK, Korea, Republic of

309 Prevalence of metabolic syndrome and cardiometabolic risk factors in patients with long-duration psychotic illnesses
D. Hopkins, P. Gardner-Sood, J. Lally, D. Stahl, K. Greenwood, Z. Atakan, S. Smith, R. Ohlsen, K. Ismail, R. Murray, F. Gaughran, UK

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PS 006 Epidemiology of diabetes: comorbities and complications

Chair: H.J.G. Bilo, Netherlands

310 Prevalence of undetected thyroid disorders in subjects with diabetes in South India: a cohort analysis
G. Krishnan, A. Shankar, S. Jothydev, J. Kesavadev, India

311 Prediabetes is associated with early changes in microcirculation
V.M. Shyshko, T.V. Mokhort, N.L. Tsapaeva, E.E. Konstantinova, Belarus

312 Impact of glucose metabolism across the life course on retinal microvasculature architecture: the young Finns study
R. Tapp, M. Hussain, N. Hutri-Kahonen, T. Lehtimaki, A. Metha, M. Kahonen, O. Raitakari, Australia, Finland

313 Serum high-sensitivity C-reactive protein levels are associated with high risk of development of diabetic nephropathy among Japanese type 2 diabetes patients
T. Mashitani, Y. Hayashino, S. Tsujii, H. Ishii, Diabetes Distress and Care Registry at Tenri (DDCRT) Study Group, Japan

314 Decrease in the incidence of renal placement therapy for diabetes meilitus in the Netherlands
S.T. Houweling, P.R. Van Dijk, A. Kramer, S.J. Logtenberg, A.J. Hoitsma, N. Kleefstra, K.J. Jager, H.J. Bilo, Netherlands

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Prediabetes is associated with early changes in microcirculation

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Background and aims: Microangiopathy in patients with type 2 diabetes (T2D) results from previous microcirculation abnormalities (e.g. increased permeability, disturbance of intracapillary pressure and blood flow). Hyperglycemia as well as hesitance of glucose level in patients with prediabetes (impaired glucose tolerance and impaired fasting glucose) have negative impact on microvessel status. The aim of the study was to investigate microcirculation in patients with prediabetes.
Materials and methods: We included 131 patients with average age 49,03 ± 8.76 years. Patients were divided into 2 groups: group 1 - 37 patients with prediabetes, group 2 - 35 patients with type 2 diabetes (with duration of disease no longer as 5 years and treated with oral blood glucose lowering drug) and group 3 - 59 almost healthy person. Microcirculation was measured by computer based conjunctival biomicroscopy (Malaja et al.), results were evaluated by the set of criteria for quantitative evaluation of conjunctival microcirculation: FC (number of active capillary tubes), AVA (arteriovenous anastomosis), Mean (vascular tortuosity), SI (sludge), Mtr (microthrombosis). Severity of each criteria was scored and more sever changes had higher degree.
Results: Microcirculation abnormalities were revealed in patients with prediabetes: we registered statistically significant decrease of active capillary tubes (FC) (3,0[2,0;3,0]vs2,0[2,0;3,0] in control group) (1-3<0,025), increased number of AVA (2,0 [2,0; 4,0]vs2,0 [2,0; 2,0] in control group) (1-3<0,025) and Mtr (1,0[1,0;2,0]vs0,0[0,0;1,0] in control group) (1-3<0,001). Hence in patients with prediabetes we observed hypoperfusion and microthrombosis that predispose vascular wall to atherosclerosis. We registered more significant changes in patients with T2D compared to patients with prediabetes and control group. Patients with T2D had more significant Mean (1,0[1,0;2,0]) compared to group 1 and 3 (1,0[1,0;1,0]) (1-2 <0,05 and 2-3< 0,001 correspondingly), erythrocyte properties are also changed that is presented in sludge formation (2,0[2,0;4,0]vs2,0[2,0;2,0] in groups 1,3) (1-2 <0,05, 2-3<0,001 correspondingly). Consequently microcirculation abnormalities in patients with prediabetes and T2D consist in changes as in vessel wall so and in intravessel homeostasis.
Conclusion: Analysis of microcirculation demonstrate presence of changes in microvessel system during early disturbance of glucose metabolism (that is in prediabetes). T2D is associated with more significant changes in microcirculation. Damage of microvessel is one of the factors that leads to endothelial dysfunction and atherosclerosis.