P78 Endothelial Dysfunction and Arterial Stiffness During Type 2 Diabetes

Maimouna Toure[1], Magid Hallab[2,*], Souleymane Thiam[3], Sheikh AB Mane[1], Farid Belem[1], Abdoulaye Samb[1]

[1]*Laboratory of Physiology Human and Functional Explorations, FMPO, UCAD, Senegal*
[2]*Clinique Bizet, 75008 Paris, France*
[3]*Laboratory of Biochemistry and Molecular Biology, OPCF, UCAD, Dakar, Senegal*

ABSTRACT

Objective: We aimed to study Endothelial dysfunction and Arterial Stiffness in Diabetes mellitus.

Methods: 29 women with type 2 diabetes and 8 non-diabetic controls were included. Vascular function was studied with pOpmetre® (Axelife SAS-France) to assess the foot to toe Pulse Wave Velocity; and EndoPAT2000® (ITAMAR-Israel) to measure endothelial vasodilatation dependent by measurement of reactive hyperhemic index (RHI).

Results: Diabetics were 56 ± 6 years vs 47 ± 9 years. Mean diabetes duration was 9.07 ± 6.15 years. RHI was normal in all controls (1.94 ± 0.68) and abnormal in 51.72% of diabetics (1.83 ± 0.12). An abnormal ftPWV was found in 38% of diabetic subjects (11.6 ± 7.7 m/s) vs 12% of controls (7.7 ± 2.3 m/s, normal <10 m/s). There was a positive correlation between ftPWV and age ($r = 0.25$; $p = 0.001$); ftPWV and duration of diabetes ($r = 0.12$; $p = 0.03$). At the same time we found a negative correlation between RHI and fasting blood glucose ($r = -0.46$; $p = 0.01$), HbA1c ($r = -0.37$; $p = 0.04$), triglycerides ($r = -0.49$; $p = 0.03$) and total cholesterol ($r = -0.37$; $p = 0.04$). In a rapid and non-invasive way, we found endothelial dysfunction in 51.72% of diabetics and arterial stiffness in 38% of them.

Conclusion: During diabetes, endothelial dysfunction and arterial stiffness are therefore dependent on the glycemic balance, the duration of diabetes and lipid parameters. However, these two parameters appear independently and differently associated with diabetic disease.

*Corresponding author. Email: magid.hallab@gmail.com