



TITLE: Relationship between gestational insulin resistance, dyslipidemia and variations in pulse wave velocity

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ABSTRACT

"Introduction" Gestational diabetes is a state of hyperglycemia that first appears during pregnancy. This condition, associated with underlying insulin resistance, represents a cardiovascular risk factor. Our aim is to assess the relationship between gestational insulin resistance, pulse wave velocity and lipid cardiovascular risk factors.

"Methods" This was a prospective, descriptive and comparative study on 60 pregnant women aged 20 to 35 and located between the twentieth and thirtieth week of gestational age. They were divided into two groups: the control group (G1), was composed of 25 normoglycemic pregnancies with no history of disease or risk factor for gestational diabetes; the diabetic group (G2), was made up of 35 pregnant women suffering only from gestational diabetes (GD) without any other chronic pathology that could affect the quality of the vessels or the normal course of pregnancy. Parameters measured were: age, weight, height, blood pressure (BP), triglycerides, cholesterol, HOMA-IR index and finger-toe pulse wave velocity (PWVft).

"Results" The two groups are matched by age (G1: 28 ± 4 years; G2: 29 ± 3 years). The blood pressure values are in a normal range (systolic BP: [110-132 mmHg]; diastolic BP: [63-87 mmHg]; average BP: [79-103 mmHg]). The values of: Total cholesterol (G1: 0.95 ± 0.08 ; G2: 2.4 ± 0.7 ; $p < 0.0001$), HDL

cholesterol (G1: 0.44 ± 0.02 ; G2: 0.8 ± 0.2 ; $p < 0.0001$), LDL cholesterol (G1: 0.40 ± 0.05 ; G2: 1.3 ± 0.5 ; $p < 0.0001$), triglycerides (G1: 0.65 ± 0.49 ; G2: 1.48 ± 0.27 ; $p = 0.0018$), HOMA-IR index (G1: 1.31 ± 1.05 ; G2: 7.4 ± 1.07 ; $p < 0.01$), PWVft (G1: 5.99 ± 1.23 ; G2: 10.3 ± 1.9 ; $p < 0.0001$) are significantly higher in diabetic group. HOMA-IR, total cholesterol and triglycerides are correlated with PWVft (respectively $r = 0.8931$; $p < 0.0001$; $r = 0.9867$; $p < 0.0001$; $r = 0.9507$; $p < 0.0001$).

"Conclusion": The increase in pulse wave velocity provides an index of vascular status and may represent a link between insulin resistance, dyslipidemic cardiovascular risk factors and the tendency for future cardiovascular disease.

BIOGRAPHY

Aissatou Seck has completed his PHD at the age of 43 years from Cheikh Anta Diop University/ Faculty of Medicine. He is Assistant Professor Dr in laboratory of physiology – Faculty of Medicine - at Cheikh Anta Diop University. He has over 35 publications in h-index review.

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