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## HbA1c in healthy Sudanese pregnant women in reference to body mass index

**Marwan**

Gulf Medical University, UAE

A descriptive, cross sectional study conducted in Sudan, Khartoum state in Yastabsheron Obstetric Hospital during the period from February to June 2011. Analytical and statistical methods were applied to estimate the concentration of HbA1c in apparently healthy pregnant Sudanese women as well as in apparently healthy non-pregnant Sudanese women to assess the difference in the results which may be caused by physiological and biochemical change that occur in blood of maternal ladies, so pregnant women can get a good report and interpretation of the results obtained. Blood samples were taken from a total of 90 apparently healthy pregnant women (test group) and 30 apparently healthy non-pregnant women (control group), then samples were analyzed for HbA1c by using affinity chromatography method, and results were recorded in addition to their age, body mass index and the number of pregnancies, then results were statistically analyzed. Result showed that, the mean concentration of the HbA1c in cases group was ( $4.407 \pm 1.044\%$ ) in first trimester, ( $4.797 \pm 0.621\%$ ) in second trimester and ( $4.823 \pm 0.616\%$ ) in third trimester and ( $5.660 \pm 0.461\%$ ) in control group with a P value of 0.00, indicating the highly significant difference between the two groups. The study also showed that the mean concentration of HbA1c of the first trimester is lower than that of the second and third trimesters, but there was no significant difference between the mean concentration of the second and third trimester. On the other hand, the study showed that there was a significant weak positive correlation between HbA1c concentration with all of body mass index and the age of pregnant women, but an insignificant weak positive correlation with the number of pregnancies. The study concluded that, healthy pregnant women have lower HbA1c concentrations than non-pregnant women which can be attributed to the decrease in plasma glucose values and to the shortened erythrocyte life span that occur during pregnancy. The body mass index and age affect the concentration of HbA1c, but it is not affected by the number of pregnancies. So the reference intervals for HbA1c in pregnant women should therefore be lower than those currently in use for non-pregnant women.

### Biography

Marwan is currently working as a Lecturer in Clinical Chemistry in Medical Laboratory Sciences Program at College of Health Sciences, Gulf Medical University since August 2017. He has more than seven years of clinical experience. He has also worked in Center for Advanced Biomedical Research and Innovation (CABRI) of GMU.

marwan@gmu.ac.ae

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