Dedication

To the spirit of my father...
And to my mother, brothers, sisters,
and friends,
I dedicate this work.
Acknowledgments

I would like to express profound thanks to my supervisor, Dr. Bader Eldien Hassan Elabid for his furiful guidance, unlimited assistance and encouragement throughout the course of this work.

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I am grateful to all women from whom samples were taken.
Abstract

A cross-sectional study conducted during the period from November 2009 to July 2010, compared serum levels of calcium, phosphate and alkaline phosphatase activity of 50 healthy pregnant women (as a test group) and 30 apparently healthy non-pregnant volunteers (as a control group). All were from Khartoum state. The test group and the control group were matched for age. The serum levels of calcium, phosphate and the activity of alkaline phosphatase were measured using BTS #71895 humalyzer analyzer and commercial kits from Biosystem Company.

Serum calcium was significantly reduced, while serum phosphate was not significantly changed, whereas alkaline phosphatase activity was significantly raised in the test group compared to the control group.

In the test group, serum calcium and phosphate showed insignificant correlation with the duration of pregnancy, whereas serum alkaline phosphatase activity showed significant strong positive correlation with the duration of pregnancy.

From this study, it is concluded that; pregnancy is associated with significant reduction in serum calcium that correlates weakly with the duration of pregnancy. Serum phosphorus is not significantly changed during pregnancy and has insignificant correlation with the duration of pregnancy. In addition serum alkaline phosphates activity is significantly raised and has a strong positive significant correlation with the duration of pregnancy.
Abbreviations

ALP                                           Alkaline phosphatase
ATP                                           Adenosine triphosphate
DNA                                           Deoxyribonucleic acid
EC                                            Enzyme commission
EDD                                           Expected date of delivery
GFR                                           Glomerular filtration rate
LMP                                           Last menstrual period
PTH                                           Parathyroid hormone
RNA                                           Ribonucleic acid
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Appendix (1)
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Questionnaire

Serum Calcium, Phosphate and Alkaline Phosphatase Activity in Healthy Sudanese Pregnant Women

General information:

1. Name: .......................................................... No(  )
2. Age: .......................................................... years

Clinical information:

Duration of pregnancy in weeks: ......................

History of diseases:

D.M (  )
Hypertension (  )
Renal diseases (  )
Bone diseases (  )
Others (  )

Investigations:

Serum Calcium: ....................... mg/dl
Serum Phosphate: ....................... mg/dl
Serum Alkaline phosphatase: .......... ... U/L