



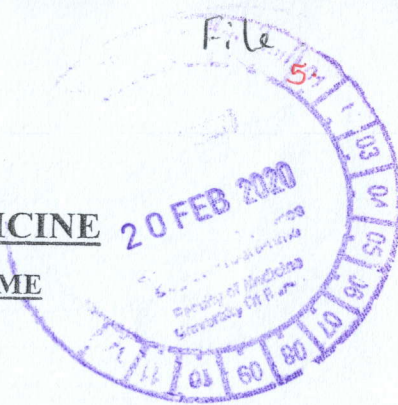
UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE  
MEDICAL LABORATORY SCIENCE DEGREE PROGRAMME

Year End Exam Year 2 – 6<sup>th</sup> Batch  
EPIDEMIOLOGY MLS 2202 (Theory I)

Date : 27<sup>th</sup> April 2016

Time: 2.00 pm - 3.00 pm

INDEX NO:.....



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Structured essay Questions - Answer all questions

- 1. Read the following abstract and answer the questions

Comparison of the serum iron, ferritin levels and total iron-binding capacity between pregnant women with and without gestational diabetes.

**BACKGROUND:** Gestational diabetes mellitus (GDM) is the most common metabolic disorder during pregnancy. GDM causes substantial morbidity and mortality and long-term complications. GDM-related risk factors have not been completely identified yet. Some studies have found relationship between increased serum ferritin and impaired oral glucose tolerance test but the relationship between serum ferritin and risk of GDM has been controversial. The aim of the study was to determine serum iron and ferritin levels and total iron binding capacity (TIBC) in women with GDM and comparison with normal pregnant women. **MATERIALS AND METHODS:** This case-control study was performed among 200 pregnant women (case = 100, control = 100) who were referred to Yahya-Nejad Hospital in the second trimester in Babol from 2008 to 2009. GDM was diagnosed by impaired OGTT based on Carpenter and Coustan criteria. The 2 groups were matched in age, gestational age and parity. **RESULTS:** High serum ferritin level increased the risk of gestational diabetes to 2.4-fold [OR = 2.4 (0.83-6.9) CI = 95% (P = 0.10)], while in those with low ferritin levels, the risk of developing gestational diabetes was reduced to 82% [OR = 0.8 with (0.08-0.37) CI = 95% (P = 0.001)]. Using the logistic regression model, after adjustment for BMI, the OR was 2.37 [(0.80-7.01) CI = 95% (P = 0.11)] for low ferritin level and OR = 0.20 [(0.09-0.44) CI = 95% (P = 0.0001)] for high ferritin level, which was statistically significant. **CONCLUSION:** The serum ferritin level was markedly higher in women with gestational diabetes than in normal pregnant women; therefore, high ferritin can be regarded as a significant risk factor for the development of gestational diabetes.

- 1.1 What are the advantages and disadvantages of the epidemiological research design used in this study? ( 50 marks)

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