

**Maternal Serum Median Levels of alpha-foetoprotein, human chorionic gonadotropin and unconjugated estriol in the second trimester in Pregnant**

**Women in Basra**

A Thesis

Submitted to the college of medicine

University of Basra

In partial Fulfillment of the Requirement

For the Degree of Master Science

In Clinical Biochemistry

By

Hanan Hamid Ramadhan

B. Sc Pharmacy

Supervised by

Assistant Prof.

Professor

Dr. Nazar S.Haddad

Dr. Sajidah Abdulridha Hassan

Department of biochemistry

Department of Obstetrics &Gynecology

College of Medicine

College of Medicine

1438 A.H.

2016 A.D

# Abstract

## **Background:**

Prenatal screening is an issue that has become more important over the past few years, triple test screening in the second trimester using AFP,  $\beta$ hCG and uE3 play an important role in diagnosis of congenital anomalies. Establishment of median is of value in reach diagnosis with use of Multiple of median as risk determinant. Median level is highly affected by ethnicity, geographical area and weight, in addition to multiple pregnancies and chronic illness such type I diabetes. There is a lack median reference in Iraqi women in order to in cooperate this test as prenatal measures.

## **Objectives:**

This study was intended for the establishment of median values for the triple markers (AFP,  $\beta$ hCG and uE3) for our population in the second trimester, in addition to comparison of that median with other geographical areas taking into consideration weight and ethnicity.

## **Materials and methods:**

This study was enrolled 256 pregnant women routinely visit primary health care centers, at 14 Tammuz center in Al- Assmaee and Shatt Al Arab, Basra, Iraq between 14 to 20 weeks of gestation. Gestational age for all pregnant women was determined from the last menstrual period (LMP), and Age of pregnant women was determined at the expected date of delivery. Pregnant women were divided into groups of seven gestational weeks started from 14 and ends in 20 weeks. Singleton, non-diabetic pregnancies were only included in the study. Blood samples were taken from pregnant women, maternal serum levels of AFP,  $\beta$ hCG and uE3 were determined.

All pregnant women were followed for the period of pregnancy to determine pregnancy outcome.

## **Results:**

The median values of the three parameters were calculated for each completed gestational week

The present study showed that 92.7 % of pregnant women were young women (< 35 years old) with their age ranging from 15 – 47 years. Age difference did not contribute to any significant change in level of triple markers

$\beta$ hCG appear to be significantly affected by the maternal weight with lowest values observe in obese women. In contrast to AFP and uE3 is greatly affected by gestational age and ethnicity.

The triple markers median for AFP,  $\beta$ hCG, uE3 for Iraqi women have been compared with different country Belgium, Germany, UK, Indian, USA and Canada, this study revealed that the median values for AFP and uE3 were significantly different as compared with that of the other countries, and  $\beta$ hCG also had been shown significant difference as compared with the Indian population.

## **Conclusions:**

The median values of the of the Triple marker AFP, uE3 and  $\beta$ hCG were estimated for Iraqi pregnant women to be used as a reference value for prenatal screening. Wight, ethnicity and gestational age are important in the determination of the median.

