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PREVALENCE OF HIGH RISK PREGNANCY IN WOMEN WITH CHRONIC MEDICAL DISEASES IN MOSUL CITY

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ABSTRACT

Background: High risk pregnancy is the time during which the mother, fetus or new born, are at risk of death, disability or illness higher than usual. High-risk pregnancy is defined as one which is complicated by factor or factors that adversely affects the pregnancy outcome maternal or perinatal or both. **Patients and Methods:** The aim of this study is to demonstrate the prevalence of high risk pregnancy in Mosul city and to achieve this aim a cross sectional study was done and the sample start to be collected from 1st of February 2015 to 1st august 2015 over six months in family medicine centers in Mosul city.A convenient sample of 300 pregnant women were selected randomly and a specially designed questionnaire was used and this questionnaire were filled by interviewed with all included pregnant women. **Results**: Accordingly, this study revealed that about (26%) of all pregnant women included in the study were classified as high risk pregnancy. Regarding age the present study showed that (73.07%) of pregnant women their age was >35 years among the high risk group. Thefrequency of medical risk factor of the pregnant women which include anemia HB <11gm/dl was (25.66%), thyroid disease about (0.66%), fever during pregnancy was (13.66%), whilediabetes and heart disease where not recorded among study sample. **Conclusions**: According to the results and comparing it to other studies we can conclude thatearly detection of risk factors during pregnancy or even before is necessary in order to assess the level of risk and deal with it properly.

INTRODUCTION

Pregnancy is the term used to describe the period in which a fetus develops inside woman's uterus. After fertilization of egg by sperm then implanted in the the uterus, it develops into the placenta and embryo, and later on into a fetus. Pregnancy usually extended up to 40 weeks, start from the first day of women's last menstrual period (LMP) to delivery,and is divided into three segments of pregnancy called trimisters, each one of them lasting three months.[1]

Physiology of pregnancy

Pregnancy is a dynamic process leads to many physiological changes in body systems and these changes may give rise to ease or harden examining some events. In addition it causes some changes in the laboratory result.[1]

These physiological changes in the mother take place in response to requirements created by pregnancy and these involve the followings

1. Buttress of the fetus (volume, nutritional and oxygen support, clearance of fetal waste).
2. Safeguard of the fetus (from starvation, drugs, toxins).
3. Get the uterus ready for child birth.
4. Preservation of the mother from prospect cardiovascular disease at labour.

Age, ethnicity, and genetic factors of the mother affect the capacity of the mother to conformpregnancy.

All maternal organ system are claimed to adapt to the requirements of pregnancy. The quality, degree and timing of adaptation varies from one person to another and from one organ to another.[2] Which include.[3,4,5,6,7]

A. Weight changes.
B. Carbohydrate metabolism.
C. Respiratory changes.
D. Cardiovascular changes.

E. Hematological changes.
F. Renal system.
G. Endocrine changes.

High risk pregnancy: High risk pregnancy is the time during which the mother or new born, are at risk of mortalityand morbidity higher than usual.[8]

High-risk pregnancy known as a pregnancy which is complicated by factor or factors that negatively affects the pregnancy consequence (perinatal, maternal or both), there are many criteria for high risk pregnancy and one of them is History of chronic medical diseases which include hypertension, diabetes, thyroid, heart disease and chronic kidney disease.[9]

Aim of study
The aim of this study is to determine the prevalence of high risk pregnancy among the pregnant women who have chronic medical diseases attend the family medicine centers in Mosul city.

patients & methodsStudy setting
This study was achieved in Mosul city that is located in Northwestern of Iraq, there are 9 family medicine centers which follow two major sector (Alquds, Alzuhoor, Alaqsa, Alqadisiyah, Alarabi, Tamooz, Alhadba, Almansoor and Alrabee family medicine centers) data collection and follow up of patients were clinically carried out at four family medicine centers in Mosul city which are (Alquds, Alzuhoor, Tamooz and Alhadba).

Study design
A descriptive cross sectional study was selected in orderly to achieve the aim of the present study.

Duration of study
Apart from the period of preliminary preparations, the study started at 1st February 2015 to 1st August 2015 over six months period.

Study sample
The present study included pregnant women attending to maternity care in four familymedicine centers in Mosul city during study period.

Sample size
The study will include 300 pregnant women which calculated according to certain equation which determine the least sample size:
$N = P (1-p) z^2 / ME^2$.[17]
N = sample size.
Z = 1.96 is the statistical parameter corresponding to the confidence level of 95%. P = the expected prevalence (10%).
ME = 0.05 is the marginal error.

2.6 Sampling technique
The study population was selected in four steps by using (Multi-Stage Cluster Sampling)

- First step: determined the number of major sectors for primary health care in Mosul city.
- Second step: in selected major sectors, determined the number of family medicine centers which follow these sectors and found that the majority of these family medicine centers belong to the left and right P.H.C. sectors, for this reason this study done at family medicine centers in the right and the left P.H.C. sectors.
- Third step: simple random sampling technique was preformed to select four family medicine centers. In each side of Mosul city, two family medicine centers were selected randomly.
- Fourth step: all pregnant women in the selected centers were chosen to be included in this study according to the random distribution of these centers over the days of study period.

Data Collection tool
For data collection a specially designed questionnaire was prepared by the researcher which was done by interviewing with all pregnant women included in this study.

1. Classification of risk pregnancy:[10]
Risk scoring tool was utilized to estimate pregnancy risk. It is a simplified, veracious form for antenatal shows that there were a number of cumulative risk factors in specific pregnancies that affect the perinatal consequences in a synergistic fashion and that these factors were more readily expressed and easily detected in terms of numerical score.

These scores categorize patient as
A. Low risk (0-2).
B. High risk (3-6).
C. Sever risk (7 and above).

On the principles of past obstetric history, medical diseases and conditions in the presentpregnancy.

Data collection tools
Anthropometric measurement
Anthropometric measurements of weight and height have been done under the researchersupervision using weighting and height scales.

After the measurement of weight and height, the data were recorded into specialized form.

A. Weight measurement
By using a platform scale on uncarpeted floor pregnant women were weighed , regular checking of the equipment to make sure that they have accurate measurements and to check accuracy of the scale which is known as "Calibration " this done by putting known weights on it.[11]

B. Height measurement
By using a "drop down" tape measure fixed at about

2metres on a wall, height measurements will be taken. A reliable measurement could be done without this tape measure by making a point (top of clients head) against a wall and measuring up to it. When taking measurementsof height you must:

1. Ask the pregnant woman befor taking the measurements to remove their shoes.
2. Ask the pregnant women to stand with their back to the wall. making the back of their feet, upper back and their head should all be in contact with the wall.
3. They should be stand directly under the drop down tape measure.
4. Droping the tape measure until it resent gently on the top of pregnant head and register the measurement. [12]

C. BMI measurement

Calculating body mass index by dividing weight in kg by square height in meters, BMI =weight (kg)/ height (m^2).[13]

2.8.2 Blood pressure measurement in pregnant women

1. Use of a mercury type sphygmomanometers are preferable to automated blood pressure monitors.
2. Use an appropriate size cuff.
3. Woman should be seated or lying at 45^o angle, with arm at level of the heart, blood pressure should not be measured when the women is lying on her side since this will give lower reading.[14]

Statistical analysis

Data were entered to a Word-Excel 2007 worksheet and data analysis was performed using Minitab statistical software.

Prevalence rate have been calculated in order to describe the characteristic of studypopulation.

2.10 Administrative agreements

The official administrative agreement was obtained from DOH in Nineveh director of health Mosul before conducting this study.

A verbal consent was taken from the participant in this study.

RESULTS

Background characteristics of the study population

Of 300 pregnant women interviewed, there was 215 (71.66%) had low risk pregnancy, 78 (26%) had high risk pregnancy, 7 (2.33%) had severe high risk pregnancy as shown in figure 1.1

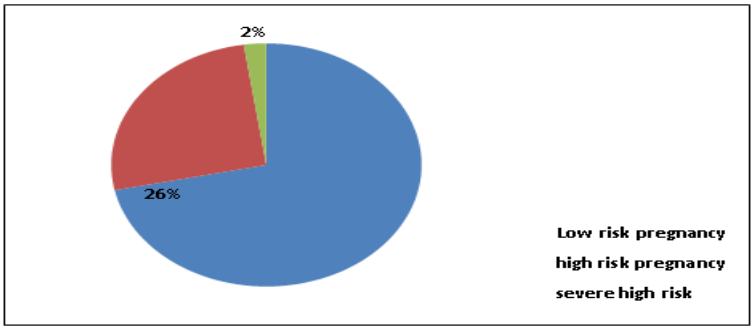

Figure 1.1: Distribution of study participants by presence of risk pregnancy.

Distribution of education of the mother

By noticing Figure1.2, it is shown that the education of the mother has been distributed into four categories (illiterate, primary, secondary and graduated). The highest percentage of education of the mother was primary followed by secondary then graduated and the illiterate came finally which is (38.33%, 28.66%, 24%, 9%) respectively.

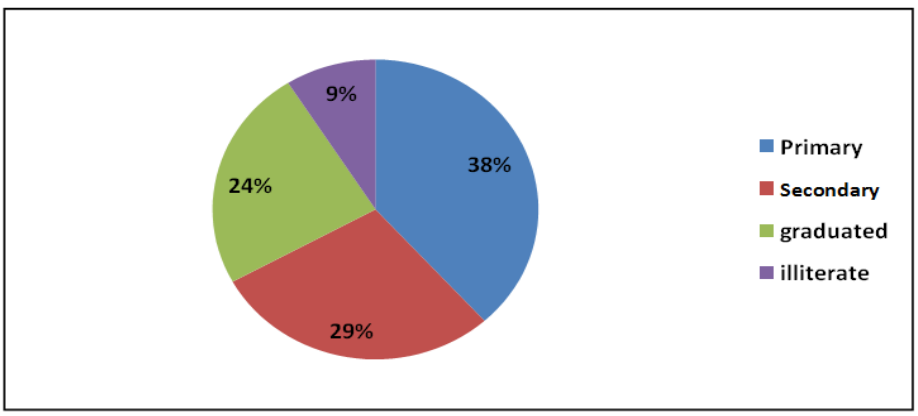

Figure 1.2: Distribution of study population according to education of the mother.

Distribution of occupation of the mother
Table 3.1 demonstrate that the occupation of the mother has been distributed into three categories (house wife, employed and student). The highest percentage of occupation of the mother was house wife followed by employed and then student which was (82%, 12%, 6%) respectively.

Table1.1: Distribution of study sample according to occupation of the mother.

Occupation	No.	%
House wife	246	82
Employed	36	12
Student	18	6
Total	300	100 %

Distribution of residency of the mother
According to residency Table 3.2 reveals that the majority of the pregnant women was living in urban area which is (94.66%) in comparison to rural which is (5.33%).

Table 1.2: Distribution of study sample according to residency of the mother.

Residency	No.	%
Rural	16	5.33
Urban	284	94.66
Total	300	100 %

Distribution of age among the study population
Regarding the age of pregnant women Table 3.3 clarifies that (90%) of pregnant women their ages were between (18-35 years) old, while (8.66%) was older than (35 years) and only (1.33%) was less than (18 years) old.

Table 1.3: Distribution of study sample according to the age of the mother.

Age	No.	%
< 18	4	1.33
> 35	26	8.66
18 - 35	270	90
Total	300	100 %

Distribution of BMI and height among the study population
The distribution of anthropometric measures in the study population was revealed in Table 3.4 which shows that the frequency of BMI more than (30 kg/m^2) among pregnant women was about (3.66%), while the frequency of height less than (145cm) was about (3.33%)among the pregnant women.

Table 1.4: Distribution of Anthropometric measures among the study population (N=300).

Factor	No.	%
BMI > 30	11	3.66
Height < 145 cm	10	3.33 %

Distribution of study sample according to medical history of the mother
Table 1.5 clarified that the frequency of medical risk factor of the pregnant women which include anemia HB <11gm/dl was (25.66%), thyroid disease about (0.66%), fever during pregnancy was (13.66%), while diabetes and heart disease where not recorded among study sample.

Table 1.5: Distribution of study sample according to medical history of the mother (N=300).

Factor	No.	%
Anemia	77	25.66
Thyroid disease	2	0.66
Fever	41	13.66
Heart disease	0	0
Diabetes	0	0

Distribution of study sample according to hypertensive disorder of pregnancy Table 1.6 illustrates that hypertensive disorder of pregnancy was (3%) among study sample, concerning PIH the percentage was (1.33%), the preeclampsia percentage was (1%) and chronic hypertension percentage was (0.66%).

Table 1.6: Distribution of study sample according to HDP (N=300).

Factor	NO.	%
Hypertensive disorder of pregnancy	9	3
PIH	4	1.33%
Preeclampsia	3	1%
Chronic Hypertension	2	0.66%

Distribution of anemia and severity of risk pregnancy
Table1.7 illustrate that about (32.05%) of high risk group had anemia. While the highest percentage of normal hemoglobin level was among low risk group which was (75.7%).

Table1.7: Distribution of study sample according to anemia and severity of risk pregnancy.

Anemia	Low Risk		High Risk		Severe Risk		Total (n=300)	
	No.	%	No.	%	No.	%	No.	%
HB < 11 g/dl	46	59.7	25	32.5	6	7.8	77	100
HB ≥ 11 g/dl	169	75.7	53	23.76	1	0.54	223	100

DISCUSSION

This study determines the frequency of HRP among Iraqi women who attended a family medicine centers in Mosul city. The present study, demonstrate that (26%) of the sample was classified as high risk pregnancy, This value is close to the result obtained from a study in India and Nepal.[15,16] However the result in this study was inconsistent with a result of other study done in Saudi Arabia who reported the frequency of HRP as (63.3%)[17] This difference may be contributed to difference in communities, population, methodologies and diagnostic criteria in addition to different tools used for measuring high risk pregnancy.

This study showed that the highest frequency of occupation was house wife which was (82%) and it was similar to a study done in India which revealed that about (92.6%) of pregnant women was house wife.[15] While the frequency of employed one in this study was (12%) which mimic other study done in Iran (12.1%)[18] Regarding the residency the present study clarified that the majority of study sample lived in urban area (94.6%) which is similar to a study of Eslami in Iran in 2013,[18] and the minority of them was lived in rural area which was (5.33%) and it is parallel to other study of

EL-Badawy in Egypt in 2004.[19] In relation to age of study sample this study indicated that frequency of maternal age of <18 was (1.33%) which is similar to the study done in Iran which was (3.5%).[18] and disagree with the result of other study conducted in India which was (10.5%)[20] ,while the frequency of maternal age of >35 was (3.66%) and it was similar to other study done in Nepal which was (4.7%)[16] and this study is inconsistent with the study of Yassin in Egypt in 2005.[21]

This study showed that the percentage of BMI (>30kg/m^2) of the study sample was (3.66%) which seems to be similar to that in Iran (8.7%).[18] and much lower than other study done in Saudi Arabia which revealed that about (60%) of pregnant women their BMI was (>30 kg/m^2)[22]. This difference in the result may be due to cultural habits, attitude to food, limited physical activity and excessive gestational weight gain along with subsequent deliveries According to the height of the study sample this study revealed that the height of (≤145) of the pregnant women included in this study was (3.3%) and this result seems to be similar to the other study of Sapna in India in 2014.[23] The present study, showed that the percentage of women who had anemia was (25.66%) which was parallel to other study done in Erbil city in 2013 which revealed that (23.8%) of the study sample had anemia.[24] Also this study clarified that the percentage of hypertensive disorder of pregnancy was (3%) which agrees with other study done in Iran which indicated that (2.32%) of the study sample had HDP[25] and also come with other studies of Ventura in United State and Zareian in Iran which showed that the percentage of HDP of total study sample was (3.8% ,3.3%) respectively.[26,27] But this study is inconsistent with other studies in Brazil and Turkey which revealed that the percentage of HDP of total study sample was (7.5% 8.49%) respectively.[28,29] This difference might represent the effect of some demographic factors such as racial variation, in addition to sample of these studies where collected from emergency department of maternity ward and patient who were hospitalized which affect the prevalence of HDP. Regarding the chronic hypertension this study demonstrated that (0.66%) of total sample had chronic hypertension which agrees with other study conducted in Iran which was (0.17%)[25]. In relation to preeclampsia this study found that only (1%) of total sample had preeclampsia which agrees with other two different studies done in Iran which showed that (2.13%, 3%) respectively had a history of preeclampsia among total study sample [25][30], whereas the present study revealed that (1.33%) of total sample had PIH and this result agrees with other study of Sapna in India in 2014.[23]This study revealed that the frequency of anemia among high risk group was (32.05%) and this result is consistent with other study conducted in Erbil, Iraq in 2013[24] and inconsistentwith other study of Samar done in Al-Taif Saudi Arabia which showed that (16%) of high risk group had anemia.[10] This high frequency of anemia might be due to many factors like poverty, poor dietary habit, poor compliance of iron-foliate supplements during pregnancy in our locality.

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