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المؤتمر الدولي الليبي الثامن للعلوم الطبية والتطبيقية والانسانية

تحت شعار: التطورات التكنولوجية والاتجاهات الحديثة في التعليم

Original article

Risks Facing a Pregnant Teen in Iraq, the Health Problems, and the Proposed Solutions

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ABSTRACT

Teenage pregnancy continues to be a major health and social problem in various parts of the world including Iraq. A case control study conducted over 2 years in the department of obstetrics and gynecology, Al-Yarmouk tertiary hospital in Baghdad. Two-hundred primigravida were chosen according to strict inclusion and exclusion criteria, the case group were 100 late teenagers (16 y-19 y) and the control group were 100 women aged between 26-29 y. The women in both groups were attending labor ward, clinical and laboratory evaluation was performed, and women were followed during labor. The mode of delivery and neonatal outcome were all recorded. In comparison to the adult women group, teenage mothers have lack of antenatal care and less use of supplements (P<0.0001), lower iron indices particularly serum iron and serum ferritin (P<0.0001). In addition, there was a higher incidence of Caesarean section (P=0.0326), postpartum hemorrhage (P=0.046). Neonates of younger mothers were more likely to be preterm (P<0.0001), have low birth weight (P<0.0009), intrauterine growth restriction (P=0.005) with higher neonatal mortality (P=0.017). Teenage mothers have higher antepartum, intrapartum, and postpartum complications in addition to poor neonatal outcomes in comparison to their older peers. It is crucial to spread awareness and knowledge about these risks to reduce the still high incidence of pregnancy among this group of population. Moreover, young mothers should be advised about the importance of antenatal care attendance, good nutrition, and the use of supplements during pregnancy to enhance health both for mothers and their offspring.

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INTRODUCTION

Teenage or adolescence is that period extending between childhood and adulthood, namely between 10-19 years old. [1]. It is a time of rapid physical, mental and reproductive growth with increased health demands [2]. Pregnancy in turn is a time of high risk and further demands on young women. Thus pregnancy in this critical period will add further burden on the girls health and wellbeing as maternal mortality in this age group is 5 folds than that of older mothers [3]. Moreover complications during pregnancy and labour are implicated as the second cause of death among girls under the age of 20 [4]. Teenage pregnancy is still imposed as a major health and social issue in the world particularly the developing countries [2]. According to the WHO, every year there is about 12 million birth in developing world among

girls between 15-19 years old [5]. Early marriage is one of major contributor to high incidence of younger mothers in our region as one girl among every 7 get married under the age of 19 [3,6]. In addition to poverty, social and traditional considerations, many Arab countries, including Iraq that survived conflict and post-conflict situations revealed further increase in marriage among girls younger than 18 years old [7]. Dealing with such a special situation, health care providers have responsibility to enhance awareness about risk of early maternity by exhibiting maternal and neonatal complications of teenage pregnancy, finding solutions and advices to improve that pregnancy outcome. For all the above mentioned, this study was conducted in one of Baghdad's largest tertiary hospitals. The aim of which was determine differences in maternal and neonatal outcome in teenage mothers in comparison to older peers in Iraqi population.

METHODS

Study design and patients

This case control study was conducted in the departments of obstetrics and gynecology at Al-Yarmouk Teaching Hospital in Baghdad from the 1st of December 2022 till the 1st of March 2024. Informed verbal consent was obtained from all pregnant women before enrolling them in the study.

Two hundred pregnant women were included in this study from the labour ward attendants. They were divided in 2 group first 100 pregnant ladies whom age between 16-19 and second group of age between 25-27. All were married women living in relatively good housing conditions. The patients were chosen by the following inclusion and exclusion criteria

Inclusion and exclusion criteria

Patients were included if they were in first pregnancy, singleton, viable pregnancy, gestational age ranging from 28-40 weeks of gestation, spontaneous labour cephalic presentation and education beyond primary school. While the exclusion criteria any patients with chronic medical illnesses e.g., diabetes mellitus, renal diseases, liver diseases, cardiovascular diseases, chronic hypertension, thyroid diseases patients with history or diagnosed has anemia (other than iron deficiency anemia), multiple pregnancies, and clinical chorioamnionitis. History of previous abortion congenital anomaly of the fetus, presentation other than cephalic. Patients with Antepartum hemorrhage, Preterm Prelabour Rupture of Membranes (PPROM) and Pre-Labour Rupture of Membranes (PROM), pervious uterine scars, and abnormal BMI

Data collection

A detailed history was obtained from each woman in addition to complete physical and obstetrical examination. Laboratory investigations were sent for each pregnant woman including hematological tests (Maternal Hb, serum ferritin, serum iron). The course of labor was followed up by a portogram and assessed by the same investigator. Mode of delivery whether Caesarean Section (CS) or Vaginal Delivery (VD), occurrence of postpartum hemorrhage (PPH) and obtained blood transfusion. All newborns were handled and examined by a pediatrician. Neonatal medical data including birth weight (gm), preterm labour, intrauterine growth restriction (IUGR), and perinatal death.

Statistical analysis

The data were tabulated and analyzed using Comprehensive Statistics Computer software Statistical Package for Social Science (SPSS version 24). Data was analyzed using descriptive statistic and presented as (mean ± S.D) and percentage. To test for the difference in the proportions between 2 groups, Pearson chi-square (X^2) test and student t-test to determine the relative importance of various variables. *P value* < 0.05 was considered as statistically significant.

RESULTS

In the current study, the hematological investigation and the results were as follow: mean and standard deviation of Hb level in teenage group show mild to moderate anemia and in adult group normal hemoglobin. Iron Study: Serum Ferritin and serum iron was low and TIBC was high in teenage group. All were statistically significant (p value < 0.0001) when comparing with adult group.

Distribution of women according to obstetrical history and the results were as follow: the mean of *GA* in weeks for teenage group was low as compared with adult group and it was statistically significant (p value < 0.0001) when comparing with adult group. The percentage of teenage group taken Iron supplement during pregnancy was (%7.3) and these results were statistically significant when comparing teenage group with adult group (p value < 0.0001). Percentages of the women in teenage group with antenatal care (ANC) (15.07%) and this result was statistically

significant (p value < 0.05) when comparing with adult group. Percentage of women with hypertensive disorders of pregnancy including presence of *Pre-eclampsia* was (64.3%) it is statistically not significant in teenage group when compared with adult group (p value 0.268) (Table 2).

Table 1. The hematological investigation

Variables	Teenage pregnant (100)	Adult pregnant (100)	P-value
Maternal Hb g/dl (mean±S.D.)	9.1±0.45	11.5±0.42	< 0.0001*
Serum Ferritin µg/dl (mean±S.D)	11.98±4.2	30.1±7.33	< 0.0001*
Serum Iron mg/dl (mean±S.D)	51.07±8.59	72±9.18	< 0.0001*
TIBC (mg/dl) (mean±S.D)	381.4±15.56	352.1±8.25	< 0.0001*

*SD — Standard Deviation; *Significant at 0.05 level*

Table 2. Distribution of women according to obstetrical history

Variables	Teenage pregnant (100)	Adult pregnant (100)	P-value
GA (week) (mean±S.D.)	36.39±2.12	38.36±1.03	< 0.0001*
Iron supplement during pregnancy No(%)	6(7.3%)	76(92.7%)	< 0.0001*
ANC No(%)	11(15.07%)	62 (84.93%)	< 0.0001*
Presence of PE No(%)	9(64.3%)	5(35.7%)	0.268

*SD — Standard Deviation; *Significant at 0.05 level*

Regarding the delivery statistics and the pregnancy outcome, the percentage of women delivered by CS was high in teenage group (63.3%) and it was statistically significant when compared with adult group (p value < 0.0326). The percentage of women that have PPH in teenage group was (69.6%) and it was statistically significant when compared with adult group (p value=0.046).

Percentage of women who needed perinatal blood transfusion was high in teenage group (68.4%), it was statistically significant when compared with adult group (p value=0.012).The percentage of Preterm labor was high in teenage group (72.2%) it was statistically significant when compared with adult group (p value =0.048).The mean Birth weight in gram was found to decrease in teenage group (2559.2 ±762.5) and this finding was statistically significant when compared with adult group (p value < 0.0001).The percentage of low birth weight (LBW) high in teenage group (75%), it is statistically significant (p value= 0.0009) when compared with adult group. The percentage of IUGR was high (76 %) but it was statistically significant (p value < 0.005) when compared with adult group (Table 3). Perinatal death percentage was (83.3%). it was statistically significant when compared with adult group (p value 0.017).

Table 3. The delivery statistic and Pregnancy outcome

Variables		Teenage pregnant (100)	Adult pregnant (100)	P-value
Mode of delivery No(%)	**CS**	31(63.3%)	18(36.7%)	0.0326*
	VD	69(45.7%)	82(54.3%)	
PPH No(%)		16(69.6%)	7(30.4%)	0.046*
Perinatal Blood transfusion No(%)		26(68.4%)	12(31.6%)	0.012*
Preterm labor No(%)		13(72.2%)	5(27.8%)	0.048*
Birth weight (gm) (Mean±S.D.)		2559.2 ±762.5	3163.1± 511.6	< 0.0001*
LBW No(%)		27(75%)	9 (25%)	0.0009*
IUGR No(%)		19(76 %)	6(24%)	0.005*
Perinatal death No(%)		10(83.3%)	2(16.7%)	0.017*

*SD — Standard Deviation; *Significant at 0.05 level*

DISCUSSION

Teenage pregnancy has long been considered as high-risk pregnancy. Many adverse maternal and neonatal outcomes have been intensively investigated at the national [8-10], regional [3,11,12], and international [2,13-17] level. The current study tried to shed light on some of the known aspects previously discussed by other researchers. One of the frequently studied variables is the presence of anaemia, the most common medical disease during pregnancy with long list of maternal and neonatal complications [18]. Unlike many other studies which used hemoglobin (Hb) level alone for diagnosis of anaemia [2,8-10,14] that has limitations during pregnancy owing to the physiological haemodilution [19]. The current study used more diagnostic indices for detection of iron deficiency anaemia such as serum ferritin, serum iron and total iron binding capacity [18, 19]. High prevalence of iron deficiency anaemia among pregnant teenage is explained by the demands for growth in girls below the age of 21 years old burdened by further pregnancy requirements. Younger mothers in most of the times are lacking knowledge and awareness of pregnancy needs thus the current study as well as previous works [14, 15] revealed lack of antenatal care and use of supplements during pregnancy in comparison to adult mothers. On the other hand this could be further attributable to unemployment of the teenage mothers themselves, a factor stated in the study of Mullinge et al [16].

Caesarean section (CS) rate was significantly higher in the study group in comparison to older control, this is similar to the results of Najim et al [10] and Abbas et al [11] which can be explained either by higher risk of cephalopelvic disproportion in addition to increased risk of fetal growth restriction which lead to intrapartum fetal distress and thus need for CS. A finding that was disagreed by the work of each of Indarti et al(13) and Subedi et al [2]. Despite exclusion of cases of preterm prelabour rupture of membrane, preterm labour was significantly more common in teenage mothers which might be attributed to small size uterus and short cervix of teenagers [17] . Preterm labour has long been associated with extremes of maternal age as nonmodifiable risk factor [20]. This in turn is implicated in having higher incidence of low birth weight and perinatal death in the present study, results that agree with most of similar studies [8, 11, 13, 21], yet disagree with the study of Abu-heija et al [3] who concluded that with good antenatal and intrapartum care in a tertiary hospital setting , no difference in obstetric or neonatal outcome is observed between teenage and adult pregnant women. As the incidence of anaemia and the rate of CS were both higher among the study group, PPH, a sequalae of each (19) was again more in the teenage group, this further agree with each of Astra et al [22], AlRuaey et al[8] and Najim et al [10] .

The sample size is relatively small because of the strict inclusion and exclusion criteria. It has been long proposed that poor education and bad housing conditions with lack of support are implicated in poor pregnancy outcome of teenage pregnancy [8, 10]. In addition, whether it is the physiological immaturity in early teens (11y-15y) [14] or not (3) were also a field of debate. Therefore, educated, and older teens (16y-19y) were selected for this study.

Conclusion and recommendations

Older teenage mothers and their offspring are still at risk of various complications affecting their health and well-being. To eliminate these complications and maintain the safety of the growing generation, we recommend enhancing the health education in schools and media about risks and complications of teenage pregnancy, and spreading awareness among younger mothers and their families about the role of antenatal care and use of perinatal supplements particularly iron and folic. Also, we advise about spacing and use of proper contraception for teenage mothers to have time to enhance their maturity and thus to reduce risk on their health in subsequent deliveries.

Conflict of interests.

Each author declare that they have no conflict of interests.

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تحت شعار: التطورات التكنولوجية والاتجاهات الحديثة في التعليم

المخاطر التي تواجه المراهقات الحوامل في العراق، المشاكل الصحية، والحلول المقترحة

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المستخلص

لا يزال حمل المراهقات يمثل مشكلة صحية واجتماعية كبيرة في أجزاء مختلفة من العالم بما في ذلك العراق. دراسة حالة ومراقبة أجريت على مدار عامين في قسم أمراض النساء والتوليد في مستشفى اليرموك التخصصي في بغداد. تم اختيار مائتي خديجة وفقًا لمعايير التضمين والاستبعاد الصارمة، وكانت مجموعة الحالة 100 مراهق متأخر (16 سنة - 19 سنة) وكانت المجموعة الضابطة 100 امرأة تتراوح أعمارهن بين 26-29 سنة. كانت النساء في كلا المجموعتين يحضرن جناح المخاض، وتم إجراء التقييم السريري والمختبري، وتمت متابعة النساء أثناء المخاض. تم تسجيل جميع طريقة الولادة ونتائج حديثي الولادة. بالمقارنة مع مجموعة النساء البالغات، تعاني الأمهات المراهقات من نقص الرعاية السابقة للولادة واستخدام أقل للمكملات الغذائية(P <0.0001) ، وانخفاض مؤشرات الحديد وخاصة حديد المصل وفيريتين المصل .(P <0.0001) وبالإضافة إلى ذلك، كان هناك ارتفاع في حدوث العمليات القيصرية (P = 0.0326)، ونزيف ما بعد الولادة .(P = 0.046) كان الولدان من الأمهات الأصغر سناً أكثر عرضة للخداج (P <0.0001)، وانخفاض الوزن عند الولادة(P <0.0009) ، وتقييد النمو داخل الرحم (P = 0.005) مع ارتفاع معدل وفيات الولدان .(P = 0.017) تعاني الأمهات المراهقات من مضاعفات أعلى قبل الولادة وأثناءها وبعدها بالإضافة إلى نتائج ضعيفة عند حديثي الولادة مقارنة بأقرانهن الأكبر سناً. ومن الأهمية بمكان نشر الوعي والمعرفة حول هذه المخاطر للحد من معدلات الحمل التي لا تزال مرتفعة بين هذه المجموعة من السكان. علاوة على ذلك، ينبغي توعية الأمهات الشابات بأهمية حضور الرعاية السابقة للولادة، والتغذية الجيدة، واستخدام المكملات الغذائية أثناء الحمل لتعزيز صحة الأمهات وذرياتهن.

الكلمات الدالة. حمل المراهقات، فقر الدم، انخفاض الوزن عند الولادة، العراق.