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The risk factor of preterm labor in Mosul city

Amenah Qasim yehya[1*], Enaam Khazal Shihab[2], Alaa Abd- Alghany Younis[3]
[1] Iraqi Board, Community Medicine, Department of Public Health, Nineveh Health of Directorate, Iraq
[2] Obstetrics & Gynecology Specialists, Al Salam General Hospital, Nineveh Health of Directorate, Iraq
M. Sc, Community Medicine, Nineveh Directorate of Health, Iraq

Abstract
Background: Pre-term birth is the main cause of neonatal mortality, morbidity and childhood disability and remains one of the most serious problems in obstetrics. PTB is defined as gestational age at birth of less than 37 completed gestational weeks.
An estimated 15 million babies born too early every year, that is more than 1 in 10 babies (2). Approximately 1 million children die each year due to complications of pre-term birth many survivors face a life time of disability, including learning disabilities and visual and hearing problems.
There are three-part series on preterm birth, which is the leading cause of perinatal morbidity and mortality in developed countries. Infants are born preterm at less than 37 weeks gestation after: spontaneous labor with intact membrane
There are many factors that cause preterm labor These factors include demographic factors, obstetric history, cervical and uterine factors, bleeding, infection and other factors such as polyhydramnios or oligohydramnios, fetal anomalies especially involving multiple organ systems and central nervous system abnormalities, maternal abdominal surgery in late second or third trimester, maternal medical conditions such as diabetes mellitus and hypertension (essential or pregnancy induced) are associated with a higher rate of preterm delivery; however, these preterm birth are often intentional preterm deliveries because of maternal complications rather than the result of spontaneous preterm labor, the sign and symptoms of preterm labor include regular or frequent sensation of abdominal tightening, constant dull back pain, vaginal spotting and preterm rupture of membrane.
Other maternal risk factors including multi gravity, short interval between pregnancies and history of abortion have an important role in the risk of pre-term labor. However, prevalence of these factors may vary among different communities.

Keywords: preterm labor, communities, complications

Introduction: Aim

To identify local risk factors that could be targeted to reduce the risk of PTB in Mosul city.

Methods

The study was conducted in Mosul, the second largest city in Iraq and the center of the Nineveh regional government district. During the six-month period from 1st of March 2019 to 30th of September 2019, cases and controls were selected from the four main maternity hospitals in Mosul. To ensure that all available cases admitted to the four hospitals during the study period were enrolled, study staff visited the hospitals on a weekly schedule.
A case-control study design was used. Cases were defined as pregnant women with a live PTB (<37 weeks) by vaginal delivery or caesarean section. Controls were defined as pregnant women admitted to the same hospitals with a full-term live birth (≥37 weeks) by vaginal delivery or caesarean section. In general, pre-term cases were diagnosed in advance by the resident specialist. All eligible cases present during the study hospital visits were approached in the postpartum recovery room following the birth. A total of 200 cases were selected and all of them agreed to participate in the study. Each case was assigned a control, a woman in the nearest adjacent bed to the case participant who met the selection criteria. All subjects approached agreed to participate in the study.
All cases and controls were interviewed face-to-face using a specially designed questionnaire. In addition to general background information, respondents were asked questions about suspected risk factors.
Information about suspected risk factors for the present pregnancy and past obstetric history were obtained from the patient and/or from the clinical case record as applicable. The diagnosis of cervical incompetence was taken from clinical case notes (defined as dilatation of the cervix 2 cm or more I n the first trimester by US examination).
The patient was asked about the age, residence, the parity of the pregnancy (i.e the gravida, para, abortion), the anti-natal care visits and the diagnosis and treatment of urinary tract infections during pregnancy.

Result

Odds Ratios (OR) and 95% Confidence Intervals (CI) for the OR were calculated.
A total of 200 cases and 200 controls were included in the study. Table 1 shows the age distribution of the study population. A high-risk association was observed between PTB and pregnancy at young ages less than 20 years, with an OR = 2.608.

Table 1: Distribution of study population by age.

Age groups (years)	Cases (no.)	Controls (no.)	OR
<20	83	50	2.608
20–29	70	110	0.545
30–39	35	30	1.028
≥40	12	10	0.722
all ages	200	200	-

The associations between PTB and other suspected risk factors are presented in Table 3, Among the risk variables of the current pregnancy and past obstetric history, it illustrates positive risk association between PTB and urinary tract infection (OR = 2.78), anxiety (OR = 4.846), more frequent antenatal visits due to pregnancy complications(1-3 visits) (OR = 1.4).

Table 3: Distribution of study population according to other suspected risk factors.

Variables	Cases (no.)	Controls (no.)	OR
Parity			
Primi	95	45	3.419
1,2	71	115	0.514
3,4	30	25	2.7
5+	4	9	0.21
all categories	200	200	-
Medical disease Urinary tract infections			
Present	135	60	4.846
Absent	65	140	0.206
antenatal visits due to pregnancy complications			
0	30	20	1.285
1–3	70	60	1.4
≥4	100	120	0.55

Discussion

A case-control study design was conducted, Recall bias is certainly one of the major limitations of a case-control study, the mothers were interviewed very soon after birth by the investigator, the questions about the obstetric history and past obstetric and medical history.

PTB is one of the most common obstetric problems, and pre-term neonates are more likely to die than full-term infants, those who survive run a greater risk of disability [1, 2]. In the crude analysis a significant risk association was found between PTB and women who conceived at younger but not at older age. No significant association was observed between PTB and parity.

The study also revealed significant risk associations between the presence of cervical incompetence, multiple pregnancies. Urinary tract infections were found to be a significant risk factor for PTB in this study, which reflects findings in some other studies the incidence of these infections was determined by clinical case histories only and no direct laboratory results were available to the authors. It is possible that women may confuse the two infections or may be more prone to report urinary rather that genital infections [4, 5].

Conclusion

Mosul, in common with other parts of Iraq, has been affected by war against ISIS during the period from October 2016 to the end of 2017 this war destroys the hospitals and primary health care centers in the whole governorate causes decrease in health provision and promotion to all community, and pregnant women are a particularly vulnerable group. They face the consequences of poor nutrition and even malnutrition, low socio-economic standards, infections and lack of public education about the importance of anti-natal care visits to detect the cervical impotence and urinary tract infections. All these risk factors, which have been found to be associated with PTB, are modifiable. They should be taken into consideration in the planning of a preventive program to decrease PTB and its sequel for mortality and morbidity among infants in Iraq.

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