High-Risk Pregnancy and its Outcome among Women Attending Antenatal Clinics in Abha, Saudi Arabia

AESHA FARHEEN, M.D.
The Department of Family & Community Medicine, King Khalid University, Abha, Saudi Arabia

Abstract

Background: Pregnancy can be complicated by presence of risk factors. These risk factors are detrimental to maternal and fetal health and can lead to adverse pregnancy outcomes.

Objectives: To identify distribution of at-risk cases in the risk subgroups; To compare the selected outcomes in the risk group with the non-risk group women; and To compare differences in outcome within the risk subgroups.

Material and Methods: A Cross-sectional study was carried out on women who had already delivered during 2012. Their records were studied to classify them into various risk subgroups. Selected outcomes (Caesarean section, abortion and birth weight) were compared between the risk and non-risk group as well as within the risk subgroups.

Results: Most women had a single risk factor in current (40.1%) or in previous pregnancy (31.5%). Multiple risk factors were found in (16.1%) of women. Women with risk in current pregnancy had significantly higher rate of abortion (91.7%). They also had higher rate of low birth weight (55.8%) and macrosomic babies (42.8%). Higher rate of delivery by Caesarean section (50.9%) was found in women with risk in previous pregnancies.

Conclusions: Having a risk factor in a previous pregnancy leads to a higher rate of Caesarean section. Having a risk factor in the current pregnancy increases the probability of abortion, and delivering low birth weight or high birth weight babies.

Key Words: Risk factors – Pregnancy – Abortion – Outcome – Low birth weight – Saudi Arabia.

Introduction

A HIGH-RISK pregnancy is one in which some condition puts the mother, the developing fetus, or both at higher-than-normal risk for complications during or after the pregnancy and birth [1]. A completely normal physiological state like young age (>16 years) or age <35 years could be a reason of high-risk pregnancy. A complication or adverse outcome in previous pregnancies (e.g. pre-eclampsia or stillbirth) or an obstetric or medical cause in the current pregnancy (antepartum hemorrhage or gestational diabetes) makes the pregnancy a high-risk one.

Studies have shown that having a bad obstetric history [2,3], being at extremes of reproductive age [4-6] and grand multiparity [7] adversely affect the outcome. Obesity during pregnancy is now a common condition [8]. Studies have confirmed the risk of adverse outcome in obese mothers [9,10]. Hypertension and diabetes during pregnancy can result in several adverse outcomes including, fetal growth restriction, premature birth, placental abruption, and stillbirth [11,12]. Severe medical illness including cardiac or renal disease leads to adverse outcomes [13].

There is a dearth of information regarding the high-risk pregnancies in Saudi Arabia. Evidence suggests that the prevalence rates for chronic illnesses in the general population in Saudi Arabia are on the rise [14]. Consequently, this may affect women within the reproductive age group, and will definitely affect the high-risk pregnancy rates and adverse birth outcomes.

This study was conducted to enrich the existing information on this subject. The aim of the study was to find out the pattern of high-risk among pregnant women and to assess the effect of risk on outcome of pregnancy.

Material and Methods

This study was carried out at the Antenatal care (ANC) clinics of Al-Manhal, Al-Mansak and Al-Wasat primary health care centers in Abha City, Southwestern Saudi Arabia.
The Kingdom of Saudi Arabia follows the WHO guidelines for basic antenatal care. Each woman at the booking visit is issued an antenatal card and all details of current and past pregnancies are recorded in it. The card outlines the criteria for assessment of high risk pregnancy. A data-driven form was developed to collect the data from the ANC cards [18].

The risk group included women who had delivered during 2012 (n=200) and had any risk factor while the control group comprised women who had delivered in the same time period and had absence of any high risk (n=200). Eventually, the sample size comprised 162 cases and 197 controls due to missing information.

In the antenatal care card, assessment of risk is based on obstetric complications and medical illnesses in previous and current pregnancies. There are 17 criteria of which the presence of any single risk factor classifies the woman as a high-risk case.

For the purpose of this study, women with risk factor(s) were classified into 5 subgroups based on number of risk factors (single or multiple) and timing of risk (previous or current pregnancy). The subgroups were; single obstetric risk factor in previous pregnancy, multiple obstetric risk factors in previous pregnancy, single obstetric risk factor or medical illness in current pregnancy, multiple obstetric risk factors or medical illness in current pregnancy, single/multiple obstetric risk factors/medical illness in both previous and current pregnancy.

Outcomes of pregnancy were: Birth outcome (livebirth, abortion, perinatal death), methods of delivery and birth weight. Data were analyzed using SPSS 17.0.

### Results

Table (1) describes the distribution of risk subgroups among the study sample. It reveals that more women had illness or obstetric complications in the current pregnancy 65 (40.12%) than in previous pregnancy 51 (31.48%). Multiple risk factors were found in 20 women, 10 (6.2%) each in previous and current pregnancy. Twenty six women (16.1%) had risk in previous as well as in current pregnancy.

Table (2) describes the distribution of outcome by type of risk. Considering the delivery method, it was observed that the Caesarean section was high (62.5%) in the risk group compared to non-risk group. Abortion, as a birth outcome, was higher in the risk group (54.5%). Proportions of low birth weight (53.1%) and macrosomia (77.8%) were higher among the risk group.

Table (3) shows the comparison of outcomes within the risk groups. To compare the outcomes within the risk groups, 5 risk subgroups were reclassified into three groups as risk factor(s) in previous pregnancy, risk factor(s) in current pregnancy, and risk factor(s) in both previous and current pregnancy. Comparison of outcome within the study group showed that risk of Caesarean section was higher (50.9%) in the group of women with history of risk in previous pregnancy. Abortion was significantly higher in women with current pregnancy risk ($p<0.001$). Comparison of birth weight showed that more low birth weight babies (55.8%) as well as large babies (42.8%) were born to women with risk in current pregnancy.
Table (3): Comparison of adverse outcome of pregnancy within the risk subgroups.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Presence of risk factor in</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Previous pregnancy n (%)</td>
<td>Current pregnancy n (%)</td>
</tr>
<tr>
<td>Abortion</td>
<td>1 (8.3)</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>28 (50.9)</td>
<td>18 (32.7)</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>14 (32.6)</td>
<td>24 (55.8)</td>
</tr>
<tr>
<td>Macrosomic</td>
<td>2 (28.6)</td>
<td>3 (42.8)</td>
</tr>
</tbody>
</table>

Discussion

In this study, most mothers with any risk factor, had a single risk factor, more commonly in the current pregnancy. Multiple risk factors were found equally in previous and current pregnancy. This suggests that women who have a bad obstetric history do not necessarily have complications in subsequent pregnancies. A similar result was reported in a prospective study in India, which concluded that the outcome in current pregnancy improves as a result of optimal antenatal care in women with a bad obstetric history [3].

Several studies have shown adverse outcomes with bad obstetric history [2,11]. This study revealed that more Cesarean deliveries occurred in the risk group. When compared within the risk groups, it was found that nearly half of the Cesarean sections occurred in women with history of risk in previous pregnancies. This could be due to a higher number of women requesting for Cesarean section in addition to the specialist opting for Cesarean delivery to avoid complications. From the available data, the proportion of emergency Cesarean sections could not be ascertained to support this view. Findings in various studies suggest that delivery by Cesarean section is commoner in women with bad obstetric history [3].

Abortion, as an outcome of birth, occurred in 22 pregnancies and their proportion in risk and non-risk groups was not significantly different. However, when compared in different subgroups of risk, it occurred significantly more in the women who had a complication in the current pregnancy. Similar finding was reported in a study in Riyadh [16]. This indicates that current illness in pregnancy has more effect on abortion rather than complications in previous pregnancies. This could be explained by the availability of better care in current pregnancy to those women who have bad previous history as they are under specialist care from early on. This assumption is also supported by the finding that the perinatal death rate is the same in both groups. However, more studies are needed to make any conclusion.

Both low birth rate and macrosomic infants were born more to mothers with risk in their pregnancy. However, the difference was not significant when compared to non-risk group as well as when compared within the various subgroups of risk. Other studies have reported low birth weight babies in women with current high risk as extremes of reproductive age [4,5], heart disease [13,17], gestational diabetes [12,18] and renal disease [16].

Conclusions:

Having a risk factor in pregnancy has a definite effect on the pregnancy outcome. Women with history of risk in a previous pregnancy have higher rate of delivery by Cesarean section. Women with risk in current pregnancy have a significantly higher rate of abortion. Higher proportions of low birth weight and macrosomia are found in women who have a risk factor in the current pregnancy.

Acknowledgements:

The author wishes to thank the ethical committee of the University for allowing to conduct this research. Special mention must be made of the efforts and guidance of Professor Shamsun Nahar, Department of Family and community medicine, KKU, Abha.

References

15. WHO criteria for basic antenatal care Accessed online at website http://www.who.int/ pmnch/ media/ publications/ aonsectionIII_2.pdf.