

Are Domestic Violence and the Excessive Use of Alcohol Risk Factors for Preterm Birth?

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Summary

Violence has been associated with adverse pregnancy outcome, which led us to determine whether patients who deliver preterm, experience more domestic violence than those who deliver at term. Two groups of patients were assessed, a preterm labour group and a low-risk group. A total of 229 patients were interviewed: 99 in the low-risk (LR) group and 130 in the preterm labour (PTL) group. The PTL group experienced significantly more violence throughout their lives than the LR group. Experiences of violence within the last year or during the pregnancy were also higher for the PTL group. This group smoked significantly more cigarettes per day, used more alcohol, and had a higher incidence of syphilis than the LR group. Violence alone does not seem to cause PTL directly, but is part of a low socioeconomic lifestyle. The fact that alcohol-use is so high among these women needs to be addressed and the need for education on values and respect, family planning use, and low-risk sexual behaviour is once again challenged.

Introduction

Abruptio placentae and preterm delivery are the two most common causes of perinatal mortality in the Western Cape.¹ As violence has been associated with adverse pregnancy outcome, including preterm birth,^{2,3} this study was undertaken to determine whether women in our community, who experienced violence, are at greater risk for these complications.

Materials and Methods

Two groups of women participated in the study. The preterm labour (PTL) group consisted of women who were admitted for suppression of labour, women who delivered spontaneously between 24 and 33 weeks' gestation regardless of obstetric history, and women who developed a placental abruption before 34 weeks gestation, in the absence of any hypertensive disorder. Mothers who were delivered pretermly for medical or obstetric indications were excluded.

The low-risk (LR) group consisted of women who received their antenatal care and were delivered at a local midwife obstetric unit.

A questionnaire was designed to collect demographic data as well as information on lifestyle and violence, for which we used the 'Abuse Assessment Screen'.⁴

Results

A total of 229 patients were recruited, 107 women with spontaneous preterm labour and/or delivery (38 with, and 69 without, a history of a previous preterm delivery or midtrimester miscarriage), 23 women with abruptio placentae, and 99 women in the LR group. The PTL group had significantly more women with a Venereal Disease Research Laboratory (VDRL) titer of more than 1:8 ($p = 0.005$). The difference persisted when the 23 abruptio-patients were separately compared with the LR group (17.3 per cent vs. 0.01 per cent; $p = 0.01$).

The number of smokers did not differ between the two groups, but the women in the PTL group smoked significantly more cigarettes per day (5.7 vs. 3.6; $p = 0.0019$). The smoking status within the PTL group [abruption group (12/23, 52.2 per cent) vs. LR group (61/107, 57 per cent)] did not differ significantly ($p = 0.36$). There was also no significant difference in terms of the number of smokers (12/33, 52.2 per cent vs. 55/99, 55.5 per cent; $p = 0.77$) of the number of cigarettes smoked per day between the abruption group and the LR group (4.5 vs. 3.6; $p = 0.14$).

Forty-three per cent of women in the PTL group admitted to alcohol use, compared with 12.1 per cent in the LR group [$p < 0.001$; OR 5.32 (2.53–11.4)]. Within the PTL group, the difference in alcohol use was not significant ($p = 0.73$). Both the abruption group (9/23, 39.1 per cent) and the rest of the PTL group (46/107, 43 per cent) used significantly more alcohol than the LR group (12/99, 12.1 per cent)

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when analysed separately; $p = 0.004$ and <0.001 , respectively.

The PTL group experienced significantly more violence throughout their lives than the LR group (59.7 per cent vs. 40.4 per cent, $p = 0.038$). Experiences of violence within the last year (31.7 vs. 26 per cent; $p = 0.36$) or during the index pregnancy (21.5 vs. 12.1 per cent; $p = 0.059$) did not reach statistical significance between the two groups, although the numbers were higher for the PTL group.

Those women who delivered pretermly without a history of a prior preterm delivery or placental abruption ($n = 69$), showed significantly higher incidences of ever experiencing violence (59.4 vs. 40.4 per cent; $p = 0.015$), alcohol use (43.5 vs. 12.1 per cent; $p = 0.001$), and smoking (5.07 vs. 3.6; $p = 0.026$), when compared with the LR group. The smoking status is given in mean number of cigarettes smoked per day.

Discussion

Women in the high-risk group had more positive serological tests for syphilis, smoked more cigarettes per day, and took more alcohol during pregnancy. More primigravidae in the high-risk group were also, at some stage of their lives, subjected to violence.

The high incidence of smoking in the PTL group may be a warning sign that these women are more likely to experience high levels of stress, which may include abuse. In addition, abused women may be less able to quit smoking during pregnancy or reduce the number of cigarettes.

The most important and shocking finding of this study was the fact that 43.3 per cent of women in the PTL group used alcohol, compared with 12.1 per cent in the LR group [$p < 0.001$; OR 5.32 (2.53–11.4)]. Unfortunately, the measurement of the quantity consumed may not have been accurate as the sizes of beer bottles and glasses differ and a standard measurement was not given. The women were only asked how many glasses of beer they drank per weekend or per day. Women in the PTL group may also have been more willing to disclose alcohol use, having just experienced a preterm birth and wanting to express any feelings of guilt. Although a beneficial effect of alcohol use during pregnancy has been found on Intrauterine Growth Restriction (IUGR) and PTL,⁷ other studies have found that heavy drinking is associated with IUGR and/or PTL.^{8,9} More studies are probably needed in order to reach a more universal conclusion on the

effects of alcohol on PTL, low birth weight and IUGR and abruptio placentae, but that will only be reached once a standardized measurement to determine the quantity of alcohol consumption is used.

In this study, women in the PTL group were more likely to have experienced violence, smoked more cigarettes per day, and used more alcohol than the LR group. They also had a significantly higher incidence of syphilis. These factors may indicate that women who deliver preterm are more likely to have a high-risk lifestyle. A possible explanation for such behaviour may be that some of these women are trying to escape the fear and anxiety associated with violence.

In addition, maternal stress is characterized by an increase in corticotropin-releasing hormone and cortisol through the activation of the maternal hypothalamus-pituitary-adrenal (HPA) axis.¹⁰ Activation of the maternal HPA axis may result in the early activation of the fetal HPA axis, which, in turn, may lead to PTL and delivery.¹¹

Physical, sexual, and psychological violence will, as long as it is tolerated in communities, continue in families as a vicious cycle. In order to break these cycles, the mindset of an entire population will have to be changed for any real effect.

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