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EFFECT OF ANTIDEPRESSANT DRUGS ON GESTATIONAL AGE AND RISK OF LOW BIRTH WEIGHT

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ABSTRACT

Most women use antidepressants to overcome the depression that they undergo, because of various reasons. Earlier, it was considered that during pregnancy, women do not undergo depression, which is now proved false. Even during pregnancy, many women are taking antidepressants to arrest depression symptoms. With an automated database of 5 hospitals in the Ujjain city of Madhya Pradesh, India, a retrospective study was conducted. The study participants involved pregnant women from rural and pre-urban population of Ujjain district, who came for ante-natal checkup or for delivery, from January 2015 to January 2016. The association between LBW and the intake of antidepressant drugs during gestation period was also studied. Of the 200 cases of registered respondents, 142 (71%) had not taken antidepressants. Among the 142, 67 (47.1%) delivered low birth weight babies. However, 58 (28%) respondents who had taken antidepressant drugs Revotril, Serta, Lonazol, etc. delivered 47 (81%) low birth weight infants. The results were arrived at by correlating the data collected, and the study's conclusion is that the issues of low birth weight in infants can be controlled with the help of strategies such as educating the women on pregnancy planning, by educating the mother and the family members regarding the risk factors involved in using antidepressants as well as the outcome for both the mother and child or a preterm birth.

KEYWORDS: Depression, Antidepressants, pregnant, Psychiatric Treatments, Gestational, Outcomes & preterm Birth

INTRODUCTION

Major depressive conditions such as dysthmia, anxiety, dysmenorrheal, migraine, attention deficit hyperactivity disorders, addiction and sleep disorders, obsessive compulsive, eating disorders, chronic pain and neuropanic disorders are treated using antidepressants. The selective serotonin reuptake inhibitors (SSRIs), serotonins – norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), monoamine oxidase inhibitors (MAOIs), tetra cyclic antidepressants (TeCAs), and noradrenergic and specific sertonergic antidepressant (NaSSAs) comprise the main antidepressants. Depression is mainly due to overactive hypothalamic pituitary adrenal axis (HPA) that resemble the neuroendocrine response to stress. Antidepressants that regulate HPA axis function comprise a class of drugs that corrects the chemical imbalances of neurotransmitters in the brain, reducing the symptoms of depressive disorder. These chemical imbalances can cause mood and behavior changes. Acting as the communication link between nerve cells in the brain, these neurotransmitters reside in the vesicles of nerve cells released by one nerve and taken up by other nerves.

Antidepressants used During Pregnancy

SSRI use during pregnancy resulted in a various risks. Depression is considered the lone cause of negative

pregnancy outcomes. In some cases, it was difficult in determining the causative relationship between antidepressant use and specific adverse outcomes. Whereas in other cases, the attribution of adverse outcomes to antidepressant exposure seems fairly clear. The use of SSRI during pregnancy leads to increased risk of spontaneous abortion and preterm birth and low birth weight issues. Birth defects like malformation and cardiovascular issues were reported as major risk factors in systematic review of antidepressants-exposed pregnancies. According to research analysis, fluoxetine-exposed pregnancies involve the risk of malformations but without any statistical significance. The FDA reports to avoid paroxetine and the MAOI as they cause birth defects. As the difference between the exposed and unexposed groups were small, their clinical significance was doubtful. On the other hand, discontinuing the antidepressants during the child birth may lead to serious withdrawal syndrome in the newborn (infants aged less than 28 days) mainly because of the presence of varying amounts of antidepressants in the breast milk, but their effects on infants are currently unknown. Moreover, SSRIs hinder nitric oxide synthesis, which is vital in setting vascular tone. Studies reveal the use of SSRIs increases the risk of premature birth, leading to preeclampsia during pregnancy. Zoloft, celexa, Prozac, lexapro etc., are the commonly prescribed antidepressants.

METHODS AND MATERIALS

Ujjain city of Madhya Pradesh in India was chosen as the area of study and study was conducted in five hospitals in the city and these hospitals covered all areas of the city. The study participants involved 200 respondents, comprising 40 patients from each hospital. Most of them were from rural and pre-urban population of Ujjain district, who visited the hospital for delivery or ante-natal checkup. The study aimed to understand the association between LBW and the use of antidepressant drugs during the gestational period. Women who had delivered a baby in the same hospital were also identified and included in the study. The use of antidepressant drugs during the gestation period i.e., for 270 days was assessed. Other data regarding the patients such as blood, BP, weight, etc., were also obtained from the prescription and reports. Pregnant women in their first trimester, who agreed to follow the intervention protocol until the third trimester and who had plans to deliver in the chosen hospitals were included in the study. The birth weight of the newborn baby was recorded within 24 hours of birth.

RESULTS & DISCUSSIONS

Among the 200 study respondents, 43% (86) infants had normal weight and 57% (114) infants were of low birth weight. When the effect of antidepressants was studied, it was found that respondents not taking antidepressants gave birth to 47.1% LBW infants, while in those taking antidepressants 81% LBW infants were reported of the 200 cases of registered respondents, 142 (71%) had not taken antidepressants. Among the 142, 67 (47.1%) delivered low birth weight babies. However, 58 (28%) respondents who had taken antidepressant drugs Revotril, Serta, Lonazol, etc. delivered 47 (81%) low birth weight infants. Table 1 indicates the significant relation between antidepressant drugs and low birth weight (below 2500 g) infants. A detailed examination of the data showed that as many as 86 (43%) of newborns had normal birth weight.

TABULATION

Table 1: Distribution of Birth Weight according use of Antidepressant Drug
[AQ: Please Check the Table Presentation for Clarity, Especially the Columns on the Right]

ANTIDEPRESSANT DRUG	NORMAL	LBW	TOTAL	Calculated value	Tabulated value	DF	Result
NOT TAKEN	75(52.8%)	67(47.1%)	142(71%)	19.2 3.83 1 S			
TAKEN	11(18.9%)	47(81%)	58(29%)				
TOTAL	86(43%)	114(57%)	200				

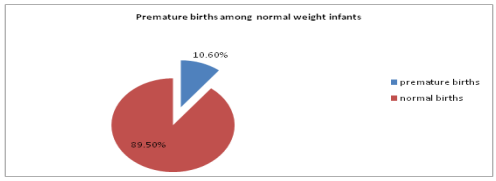

Figure 1: Premature Births Recorded Among Normal Birth Weight Infants

Only 10.6% births were recorded premature. While 89.50% were normal term babies.

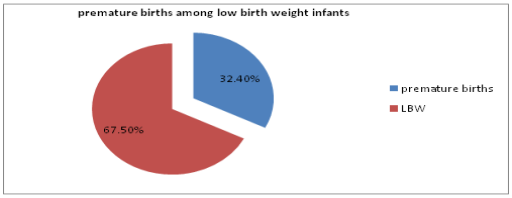

Figure 2: Premature Births Recorded Among Low Birth Weight Infants

32.40% premature birth was recorded, while low birth weight infants 67.50%

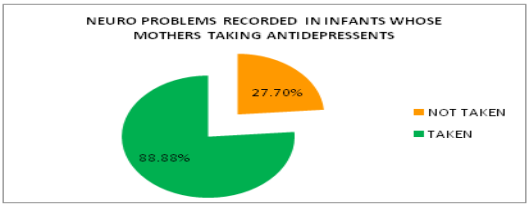

Figure 3: Percentage Wise Distribution of Neuro Problems in Infants whose Mothers were Taking Antidepressants

Figure 3 shows the effects of antidepressants on the neurological aspects of the infants. According to the study findings among mothers who were taking antidepressants, 88.88% of the infants recorded neuro issues, while among mothers were not taking antidepressants only 27.7% infants had neuro problems.

Table 2: Effect of Antidepressant Drug on Pregnancy

ANTIDEPRESSANT DRUG	Not having miscarriages	Having Miscarriages	TOTAL
NOT TAKEN	130 (91.5%)	12 (8.5%)	142 (71%)
TAKEN	50 (86.2%)	08 (13.7%)	58\ (29%)

The effect of antidepressant drugs on pregnancy is listed in Table 2, with 8.5% respondents reporting miscarriages and 13.7% reporting miscarriages in their previous history, especially after taking antidepressants. However, in the perinatal period, no increase was observed in congenital abnormalities.

Compared to other women, those using these drugs were older and smoke three times more, leading to an excess of high parity women. Among the women who had used SSRI, the frequency of multiple births was lower than expected. Among singletons, the gestational duration was shorter, and it did not affect infant survival. This being similar both in SSRI users and in non-SSRI users, may be because of uncompensated confounding or some related underlying disease. Infants were somewhat heavier than expected, especially in non-SSRI users.

CONCLUSIONS

Based on this study, it can be concluded that women taking antidepressants during or before pregnancy can affect fetus growth, with significant effect on infant birth weight. This study's finding is that the use of antidepressants in early pregnancy does not seem to have any significant risk among the infants. Although some infants were reported to have neuro problems, it was not significant.

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