



A prospective cohort study to assess neonatal adaptation in neonates exposed to psychotropic medications in utero.

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BACKGROUND

Intrauterine exposure to antidepressants during pregnancy may lead to neonatal withdrawal symptoms. The Neonatal Abstinence Score, NAS has been used to assess for withdrawal. When discussing antidepressant use in pregnancy, there is uncertainty regarding withdrawal symptoms.

AIM

We aimed to compare NASs in neonates exposed and unexposed to antidepressants.

METHODS

A prospective cohort study was carried out with pregnant women in the 3rd trimester, data were collected on women exposed and unexposed to antidepressants. Approval from the Rotunda Hospital REC was obtained.

Women were recruited between 2019-2021 after obtaining informed consent. Women with history of illicit substance misuse was excluded from the study.

Hospital records were used to collect pre-, peri- and postnatal information relevant to the study aim. NASs were completed within 0-48 hours of the birth, scores 4 and above are considered abnormal.

RESULTS

Table 1
Maternal and neonatal characteristics in the study Population

		Women on antidepressants(n=83)	Women not on antidepressants (n=138)	P value
Mean Age at Delivery		32.72 (SD=5.3)	31.90 (SD=5.7)	0.28
Parity	1 child	27/83 (27.8%)	70/138(72.2%)	0.007
	2 children	33/83 (42.3%)	45/138 (57.7%)	
	>2 children	23/83 (50%)	23/138 (50%)	
Mode of delivery	Spontaneous Vaginal delivery	30/83 (30.9%)	67/138 (69%)	0.09
	Assisted Vaginal delivery	12/83(34.3%)	23/138 (65.7%)	
	Caesarean Section	41/83 (46.1%)	48/138 (62.4%)	
EPDS (cut off 12 score)	0-12 score	11/74 (57.9%)	8/129 (42.1%)	0.04
	13 or more	63/74 (34.2 %)	121/129 (65.8%)	
Mean gestational age ± SD		38.24 (SD=1.8)	38.93 (SD=1.6)	0.005
Gender	Male	47/83 (40.2%)	70/138(59.8%)	0.39
	Female	36/83 (34.6%)	68/138 (65.4%)	
NICU Admission	Yes	32/83 (60.4%)	21/138 (39.6%)	<0.001
	No	51/83(30.4%)	117/138 (69.6%)	

Table 2
Outcome measures of the medication exposed group

	Score	Dose less than 100mg of Sertraline equivalent	Dose more than 100mg of Sertraline equivalent	P value
Finnegan Neonatal Abstinence Score (NAS)	4-7 (mild abstinence)	33/40 (82.5%)	23/43 (53.5%)	0.012
	8-11 (Moderate Abstinence)	7/40 (17.5%)	17/43 (39.5%)	
	>12 (Severe Abstinence)	0/40 (0%)	3/43 (7.0%)	
Apgar Score	More than 6 score	39/40 (97.5%)	31/43 (72.1%)	0.001
	Less than 6 score	1/40 (2.5%)	12/43 (27.9%)	
NICU Admission	No	25/40 (62.5%)	26/43(60.5%)	0.85
	Yes	15/40 (37.5%)	17/43 (39.5%)	

In total, 221 women were recruited, 138 were not on antidepressants and 83 were. Their characteristics are summarised in table 1. In the exposed group, 46% (38/83) were on Sertraline, 19%(16/83) fluoxetine, 17% (14/83) Escitalopram and 17% (14/83) on other SSRI/SNRI.

Exposed neonates has increased NASs, lower apgar scores at 1 minute and higher rates of NICU admission. The unadjusted odds ratio for any level of withdrawal for exposed women compared to unexposed was 3.43 (p<0.001 95%CI 1.73-6.81). The unadjusted odds ratio for any abnormal APGAR score at 1 minute for exposed women was 4.01 (p<0.006 95%CI 1.49-11.22). The APGAR scores at five minutes were all in the normal range.

We analysed the cohort receiving antidepressant medication comparing NASs in those receiving high dose SSRI (greater than or equal to an equivalent dose of 100mg of sertraline) to those receiving low dose (less than an equivalent dose of 100mg of sertraline). These findings are summarized in Table 2

DISCUSSION

There is increasing evidence that neonates exposed to psychotropic medications in late pregnancy are at risk of discontinuation symptoms which include poor sleeping, poor feeding, crying, reflux, sneezing, tremor and rarely seizures. We used Finnegan neonatal abstinence scoring sheet to evaluate this. Our findings were similar to international findings.

Reduced Apgar scores were observed within 1minute post delivery which resolved quickly to normal limits within 5min. Increase in NICU admission usually was to observe jitteriness within few hours of birth the majority of these admission were short lived.

A dose effect was noted on Finnegan score and Apgar Score please refer to Table 2. Reducing dose of SSRIs may help with this.

Our study recruited from an Irish population and many of the findings were statistically robust. However, recruitment problems due to Covid limited the sample size. As commonly occurs in studies of pregnant women confounding by indication for antidepressant treatment cannot be ruled out

CONCLUSION

While neonatal withdrawal symptoms with antidepressants are usually mild and self-limiting it is important to make the obstetric and neonatal teams aware of the mother's medication and women should be warned that, while outcomes are good, their child may go to NICU or need neonatology input after birth.

Lower doses of antidepressants may reduce neonatal withdrawal symptoms.