Poster

[P26-4] P26-4: Central nervous system drugs (3)

Chair: Christoph Hiemke, Germany

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[P26-4-5] Neonatal abstinence syndrome after in utero exposure to antidepressant and benzodiazepines

Mariadelfina Molinaro[1], Georgios Eleftheriou[2], Simona De Gregori[3], Michela Montagna[4], Monica Broglia[5], Marcello Di Tuccio[6] (1.Fondazione IRCCS Policlinico San Matteo, 2.Papa Giovanni XXIII Hospital, 3.Fondazione IRCCS Policlinico San Matteo, 4.Fondazione IRCCS Policlinico San Matteo, 5.Fondazione IRCCS Policlinico San Matteo, 6.Fondazione IRCCS Policlinico San Matteo)

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Background

Treatment of depression during pregnancy usually consists in selective serotonin and serotonin/norepinephrine reuptake inhibitors (SSRI/SNRI) and benzodiazepines (BDZ). Because SSRIs cross the placental barrier in different amount and may potentially influence fetal and brain development, it is important to determine how maternal antidepressant use can affect the neonate. Our aim was to evaluate whether the co-administration of SSRI/SNRI and BDZ during pregnancy is associated with an increased risk of abstinence symptoms in the newborns (NAS).

Methods

26 neonates exposed in utero to SSRI/SNRI were studied and infants' blood was collected on the first 24h after delivery to enable measurement of SSRIs (paroxetine, sertraline, citalopram, escitalopram, duloxetine) and BDZ (lorazepam and lormetazepam) concentrations; SSRIs levels were performed by an HPLC-MS/MS validated CE-IVD assay including isotopically deuterated internal standards. The presence of symptoms, weight, age at birth and duration of hospitalisation were recorded. All mothers were in treatment with SSRIs and/or BDZ until delivery.

Results

Neonates born from mothers receiving co-administration of SSRI/SNRI and BDZ had a higher risk of developing symptoms as compared to those whose mother was not receiving BDZ (9/13, 69% versus 4/13, 31%, p 0.05). At birth, symptomatic new-borns displayed a significant lower weight and gestational age than asymptomatic ones (2609±301 *vs* 3112±310 g, and 36±1 *vs* 39±1 week, respectively, $p<0.001$). SSRIs plasma concentration were <LOQ in 5/26 neonates (3 asymptomatic and 2 with NAS), but we found 7 cases with sertraline ranging from 18.2 to 63.4 ng/mL, 6 with citalopram from 37.5 to 55.4 ng/mL, 2 with escitalopram at 14.5 and 16.6 ng/mL, and in 6 cases sertraline, paroxetine and duloxetine were found in traces. Neonatal BDZ levels were <LOQ in all patients. No relationship was found between symptoms and neonatal plasma levels of SSRI/SNRI.

Conclusions

Our results suggest that: 1) co-administration of SSRI/SNRI and BDZ during pregnancy may be associated with an increased risk of NAS; 2) low weight and shorter gestational age may enhance the risk of developing symptoms of NAS and 3) most of neonates displayed detectable levels of SSRI/SNRI even though they were not related with the presence of NAS.