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Neonatal intraventricular haemorrhage associated with maternal use of paroxetine

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Selective serotonin reuptake inhibitors (SSRIs) have been reported to inhibit serotonin uptake into platelets, resulting in decreased platelet function. We report a case of a large intraventricular haemorrhage in a 6-h-old boy, whose mother used paroxetine during pregnancy.

Keywords: intraventricular haemorrhage, newborn, selective serotonin reuptake inhibitors

Case report

After 40 weeks of uncomplicated pregnancy and labour a healthy boy with a birthweight of 4200 g was born at home under accompaniment of a midwife. The APGAR score after, respectively, 1 and 5 min was 9 and 10. The infant received vitamin K directly post partum (1 mg per os). There was no history of premature rupture of the membranes or meconium-stained amniotic fluid. The mother used paroxetine 20 mg daily during the last 5 years, continuing during pregnancy. Family history was unremarkable and in particular mentioned no bleeding disorders. Six hours postnatal the child became progressively lethargic and showed abnormal neurological responses. He was admitted to a regional hospital, where an irritated male neonate in hyperextension with a bulging fontanel was seen. The Glasgow Coma Scale was E4, M3, V2. A cranial computed tomography showed a large intraventricular haemorrhage with ventricular enlargement necessitating external ventricular drainage and transfer to a paediatric intensive care unit. Despite this intervention he developed apnoeas and severe convulsions for which he was intubated and was given multiple antiepileptic drug therapy.

Platelet count of the child and the mother, activated partial thromboplastin time, prothrombin time (PT) as well as factors VIII, IX, XI and XIII were within normal range. Platelet serotonin level in maternal plasma was 93 ng/10^9 plts (normal range >400 ng/10^9 plts). In the child platelet serotonin level was 143 ng/10^9 plts. Platelet aggregation using platelet-rich plasma of the mother in response to adenosine diphosphate (ADP), ristocetin, collagen and arachidonic acid was normal in the mother and was not performed in the child. Magnetic resonance imaging investigation showed an enlarged right ventricle and white matter atrophy at the right side. It did not reveal any vascular malformations. However, our patient remained dependent on continuous ventricular drainage. On follow-up after 7 weeks he still needed ventricular drainage and showed severe neurological abnormalities with stereotype movements, hypotony of the legs, epilepsy and abnormal eye movements with seriously disturbed visual evoked potentials.

Discussion

Selective serotonin reuptake inhibitors (SSRIs) have been reported to inhibit serotonin uptake into platelets, resulting in decreased platelet function [1]. The role of serotonin in SSRI-induced haemorrhage is not completely understood. SSRIs reduce uptake of serotonin by platelets, inducing reduction in granular storage of serotonin. This may cause decreased platelet activation. Increased bleeding tendency after use of SSRI has been described previously for users [2, 3] as well as for *in utero* exposed fetus [4].

The capacity of paroxetine to cross the placenta is illustrated by reports of neonatal symptoms associated with maternal use of paroxetine. Withdrawal symptoms in neonates after *in utero* exposure to paroxetine may be relatively slow compared with adults, due to possible immaturity of the liver in the newborn child [5, 6].

In our patient maternal use of SSRI during pregnancy might explain the severe intraventricular haemorrhage. No other predisposing factors could be discovered. More

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research needs to be done to elucidate the risks of use during pregnancy. Until utmost safety can be guaranteed, the use of SSRIs, especially during the last trimester of pregnancy, should be discouraged.

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