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Antenatal glucocorticoid administration significantly reduced the immunohistochemical expression of synaptophysin and locomotor behaviour in adolescent rats

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Several studies have indicated that abnormal prenatal changes in the circulating glucocorticoids (GCs), induced by either maternal stress or exogenous GC administration, significantly alter the development of Purkinje cell (PC) dendrites and synaptogenesis. However, it is unknown whether a single course of a therapeutic dose prenatally GCs alters the major synaptic vesicle protein synaptophysin (Syn). Thus, in this study we analysed whether a single course of prenatally administered betamethasone phosphate (BET) in pregnant rats changes the immunohistochemical expression of Syn along with locomotor behaviour (rota rod-test). The data obtained showed that in utero BET exposure resulted in a significant immunohistochemical underexpression of Syn and a significant reduction in locomotor behaviour during late postnatal life. In conclusion, our previous and current works indicate that prenatal BET administration significantly modify the cerebellar development. Of note, these and other experimental data do not portend to minimize the beneficial effects of BET administration when there is a risk of respiratory distress/bronchopulmonary dysplasia in preterm infants.

Biography

Rodrigo Pascual has completed his MSc and PhD at Universidad Autónoma de Barcelona School of Medicine (Spain). He has published more than 20 papers in reputed journals and four books.

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