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OPINION FORUM

Endogenous vs exogenous oxytocin



Oxitocina endógena vs exógena

Oxytocin was isolated and synthesized for the first time by Vincent du Vigneaud in 1953, work for which he received two years later, the Nobel Prize in Chemistry. Since then, it has been one of the research fields to the scientific community. This neuropeptide has many roles and functions in our system that have not been discovered yet, but within those who are known, we have uterine contractions and milk ejection. Recently, it has been discovered that oxytocin could also work as a buffer for the stress hormones during labour,^{1,2} as a regulator of some genes expression within the myometrium and as a possible clue in the treatment for some diseases like autism.³

Nowadays, its main use is during obstetric practice as a drug to accelerate labour. Nevertheless, the “augmentation of labour using oxytocin was defined by the World Health Organization (WHO 1996) as a practice frequently used inappropriately”.² Furthermore, several studies have shown that oxytocin is not only administered to women who have signs of labour dystocia, but also to those who do not have a problem at all.² It is important to highlight that despite all the benefits, oxytocin and its synthetic form do not work in the same way. Molecular effects of exogenous oxytocin are still a mystery unsolved, and needs further exploration.

Theoretically, therapeutic oxytocin cannot cross the blood–brain barrier due to its properties and characteristics; therefore it cannot produce natural endorphins and reduce the pain during labour. Besides, its continuous administration via intramuscular or intravenous may cause the contractions even larger and stronger, and cause hypoxia periods, which can damage the brain or even cause a hemorrhage.¹

On the other hand, endogenous oxytocin may not cause all the side effects described above. In addition, it has a neuro-protective effect during labour and it reduces endorphins in the brain. Besides, due to the fact that its liberation is

intermittent,¹ it lowers the stress by allowing the body to rest for a while before the next contraction.

To conclude, it is very likely that using exogenous oxytocin can result in a lifesaving intervention, and is necessary in some circumstances to protect both, mother and baby health and well-being. However, we believe that the frequency of its use in hospital birth today could be diminished, as well as all the side effects and risks.² It is imperative to critically evaluate risks and benefits of the therapeutic oxytocin, especially long-term implications of manipulating the oxytocin system and endocrine pathways. The consequences of using synthetic oxytocin in the social behavior and development of both mother and child is still unknown, we believe that its overuse could cause, in a future, an alteration of the relationship between the child and the society.

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