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Fiche Synthétique

OTBB2

UNIVERSITÉ TOULOUSE III PAUL SABATIER Université de Toulouse

Titre de l'étude

Etude de tolérance d'administrations intranasales répétées d'ocytocine selon 3 schémas d'administration chez des bébés présentant un SPW

Auteurs/PI/Institution/Labo

Maïté TAUBER[a,b], Kader **BOULANOUAR**[c], et al.

[a] Centre de référence Prader-Willi, Hôpital des Enfants, TOULOUSE, France
[b] Axe Pédiatrique CIC, INSERM, TOULOUSE, France
[c] ToNIC, Universite de Toulouse, Inserm, UPS, France

Contexte/Objectif de l'étude

Etudier la tolérance d'administrations intranasales répétées d'OT pendant 7 jours qui suivent la première dose selon 3 schémas d'administration chez des nourrissons présentant un SPW âgés de moins de 5 mois.

Prestation du Plateau Technique

Séquences :

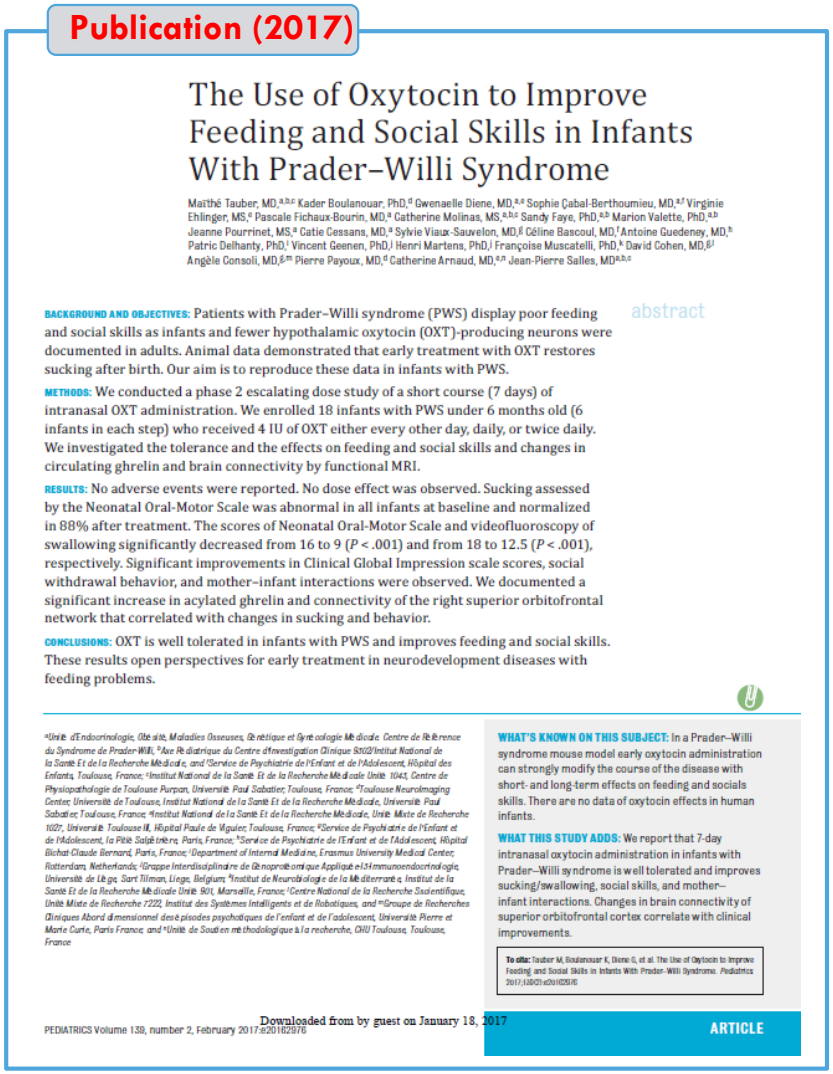
T1W-IR : 1*1*1.5 mm, 10mn50
rsfMRI : 3*3*3mm, TR/TE= 2800/33ms, 200dyn

Matériel :

- Antenne 32 CX

Période : mai 2013 – juin 2014

Publication (2017)



The Use of Oxytocin to Improve Feeding and Social Skills in Infants With Prader–Willi Syndrome

Maïthé Tauber, MD,[a,b,c] Kader Boulanouar, PhD,[d] Gwenaelle Diene, MD,[a,e] Sophie Çabal-Berthoumieu, MD,[a,f] Virginie Ehlinger, MS,[a] Pascale Fichaux-Bourin, MD,[a] Catherine Molinas, MS,[a,b,c] Sandy Faye, PhD,[a,b] Marion Valette, PhD,[a,b] Jeanne Pourrinet, MS,[a] Catie Cessans, MD,[a] Sylvie Viaux-Sauvelon, MD,[g] Céline Bascoul, MD,[f] Antoine Guedeney, MD,[h] Patric Delhanty, PhD,[i] Vincent Geenen, PhD,[j] Henri Martens, PhD,[j] Françoise Muscatelli, PhD,[k] David Cohen, MD,[g,l] Angèle Consoli, MD,[g,m] Pierre Payoux, MD,[d] Catherine Arnaud, MD,[a,n] Jean-Pierre Salles, MD[a,b,c]

abstract

BACKGROUND AND OBJECTIVES: Patients with Prader–Willi syndrome (PWS) display poor feeding and social skills as infants and fewer hypothalamic oxytocin (OXT)-producing neurons were documented in adults. Animal data demonstrated that early treatment with OXT restores sucking after birth. Our aim is to reproduce these data in infants with PWS.

METHODS: We conducted a phase 2 escalating dose study of a short course (7 days) of intranasal OXT administration. We enrolled 18 infants with PWS under 6 months old (6 infants in each step) who received 4 IU of OXT either every other day, daily, or twice daily. We investigated the tolerance and the effects on feeding and social skills and changes in circulating ghrelin and brain connectivity by functional MRI.

RESULTS: No adverse events were reported. No dose effect was observed. Sucking assessed by the Neonatal Oral-Motor Scale was abnormal in all infants at baseline and normalized in 88% after treatment. The scores of Neonatal Oral-Motor Scale and videofluoroscopy of swallowing significantly decreased from 16 to 9 ($P < .001$) and from 18 to 12.5 ($P < .001$), respectively. Significant improvements in Clinical Global Impression scale scores, social withdrawal behavior, and mother–infant interactions were observed. We documented a significant increase in acylated ghrelin and connectivity of the right superior orbitofrontal network that correlated with changes in sucking and behavior.

CONCLUSIONS: OXT is well tolerated in infants with PWS and improves feeding and social skills. These results open perspectives for early treatment in neurodevelopment diseases with feeding problems.

[a]Unité d'Endocrinologie, Obésité, Maladies Osseuses, Génétique et Gynécologie Médicale Centre de Référence du Syndrome de Prader-Willi, [b]Axe Pédiatrique du Centre d'Investigation Clinique Stic/Institut National de la Santé Et de la Recherche Médicale, and [c]Service de Psychiatrie de l'Enfant et de l'Adolescent, Hôpital des Enfants, Toulouse, France; [d]Institut National de la Santé Et de la Recherche Médicale Unité 1043, Centre de Physiopathologie de Toulouse Purpan, Université Paul Sabatier, Toulouse, France; [e]Toulouse NeuroImaging Center, Université de Toulouse, Institut National de la Santé Et de la Recherche Médicale, Université Paul Sabatier, Toulouse, France; [f]Institut National de la Santé Et de la Recherche Médicale, Unité Mixte de Recherche 1027, Université Toulouse III, Hôpital Paule de Viguier, Toulouse, France; [g]Service de Psychiatrie de l'Enfant et de l'Adolescent, la Pitié Salpêtrière, Paris, France; [h]Service de Psychiatrie de l'Enfant et de l'Adolescent, Hôpital Bichat-Claude Bernard, Paris, France; [i]Department of Internal Medicine, Erasmus University Medical Center, Rotterdam, Netherlands; [j]Groupe Interdisciplinaire de Génoprotéomique Appliquée-Immunoendocrinologie, Université de Liège, Sart Tilman, Liege, Belgium; [k]Institut de Neurobiologie de la Méditerranée, Institut de la Santé Et de la Recherche Médicale Unité 901, Marseille, France; [l]Centre National de la Recherche Scientifique, Unité Mixte de Recherche 7222, Institut des Systèmes Intelligents et de Robotiques, and [m]Groupe de Recherches Cliniques Abord dimensionnel des épisodes psychotiques de l'enfant et de l'adolescent, Université Pierre et Marie Curie, Paris France; and [n]Unité de Soutien méthodologique à la recherche, CHU Toulouse, Toulouse, France

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WHAT'S KNOWN ON THIS SUBJECT: In a Prader–Willi syndrome mouse model early oxytocin administration can strongly modify the course of the disease with short- and long-term effects on feeding and socials skills. There are no data of oxytocin effects in human infants.

WHAT THIS STUDY ADDS: We report that 7-day intranasal oxytocin administration in infants with Prader–Willi syndrome is well tolerated and improves sucking/swallowing, social skills, and mother–infant interactions. Changes in brain connectivity of superior orbitofrontal cortex correlate with clinical improvements.

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