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Oxytocin Induced Obesity: Short Note

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Short Note

Exogenous oxytocin administration in obese mice, rats, and monkeys was shown to induce sustained weight loss, mostly thanks to a decrease in fat mass, amid an improvement of glucose metabolism. A pilot study in obese humans confirmed the weight-reducing effect of oxytocin. Knowledge about circulating oxytocin levels in human obesity might help indicating which obese subjects could potentially enjoy an oxytocin treatment. Conclusive results on this subject are missing. The aim of this study was to live circulating oxytocin levels in lean and obese individuals across a good range of body mass index (BMI) values (18.5–60 kg/m^2) and to work out the impact of pronounced weight loss following gastric bypass surgery in 12 morbidly obese patients. We observed that oxytocin levels were unchanged in overweight and in school I and II obese subjects and only morbidly obese patients (obesity class III, BMI>40 kg/m^2) exhibited significantly higher levels than lean individuals, with no modification 1 year after gastric bypass surgery, despite substantial weight loss. last, morbidly obese subjects present elevated oxytocin levels which were unaltered following pronounced weight loss [1].

As obesity becomes more prevalent, research regarding oxytocin use is increasing also. A literature review from 2015-2017 assessing oxytocin use in obesity highlighted this evolving field. Body Max Index (BMI) alone appears to contribute to blunted myometrial and thus contractile responses seen in obese women. The interplay of elevated progesterone and leptin contribute to the present phenomenon, and perhaps explain the elevated oxytocin dosing seen amongst this population. None the less, the consequences of obesity on the mode of delivery remains controversial, with some investigators claiming the interval from induction to delivery, delivery within 24 hours, vaginal delivery within 24 hours, and therefore the caesarean delivery rate didn't vary between stratified classes of obesity. Conversely, the authors concluded that as BMI increases the ladies undergoing induction with misoprostol have a extended time to delivery, require greater quantities of misoprostol, longer duration of oxytocin, and increased cesarean delivery rates. Amongst the literature, there's a uniform message that obese women are somehow different. Investigating the knowledge retrospectively highlights areas, which necessitate prospective trails and assessment [2].

Oxytocin, a hypothalamic hormone that's secreted directly into the brain and enters the peripheral circulation through the posterior pituitary gland gland, regulates a variety of physiologic processes, including eating behaviour and metabolism. In rodents and nonhuman primates, chronic oxytocin administration results in sustained weight reduction by reducing food intake, increasing energy expenditure and inducing lipolysis. Oxytocin might improve glucose homeostasis, independently of its effects on weight. Clinical studies are starting to translate these important preclinical findings to humans. This Review describes key data linking oxytocin to eating behaviours and metabolism in humans. for instance, one intranasal dose of oxytocin can reduce caloric intake, increase fat oxidation and improve insulin sensitivity in men. Furthermore, a pilot study of 8 weeks of oxytocin treatment in adults with obesity or overweight led to substantial weight loss. Together, these data support further investigation of interventions that focus on pathways involving oxytocin as potential therapeutics in metabolic disorders, including obesity and DM. Therapeutic considerations and areas for further research also are discussed [3].

References

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