

Oxytocin: A Novel Treatment for Anorexia Nervosa by Professor Janice Russell MBBS MD FRACP FRANZCP MFCAP Director, Eating Disorders Unit, Northside Clinic

Anorexia nervosa might be the least prevalent of the eating disorders but it remains a major public health problem which blights the lives of many young people and their loved ones. The mortality rate is the highest of any psychiatric disorder and it has been a consistent research finding that 20% of sufferers remain chronically ill and less than 50% fully recover. (1). A distinctive neuropsychological profile has been described which includes obsessive compulsive features, perfectionism, anorexic cognitions, poor central coherence, rigid repetitive behaviors, cognitive rigidity and social anxiety with difficulties in emotion recognition and regulation (2,3) as seen in autistic spectrum disorders. It has also been reported that approximately 20% of anorexia nervosa patients actually meet clinical criteria for the latter diagnoses (4) and many more transiently exhibit these clinical features at very low weights in a "Pseudoasberger's syndrome" from which recovery is possible with weight restoration. Cognitive rigidity and social anxiety might be expected to reinforce and maintain anorexic thought patterns, behaviours and emaciation leading to ambivalent motivation, resistance to therapeutic endeavour, chronicity and premature death.

Recent research into the effects of inhaled oxytocin in young people with autistic spectrum disorders has demonstrated therapeutic promise (5) and the clinical overlap with anorexia nervosa suggests a novel treatment possibility for this condition too. Furthermore, anterior and posterior pituitary function is impaired in anorexia nervosa and oxytocin levels in CSF have been shown to be low in the restricting type (6). Oxytocin is a nonapeptide and neuromodulator produced by neurons in the paraventricular nucleus of the hypothalamus which project to hippocampus, amygdala and mesolimbic reward pathways. It is stored in the posterior pituitary, acts reciprocally with ADH and is itself modulated by adiponectin with roles in feeding, metabolism, parturition, lactation and social bonding (6). Intranasal oxytocin is safe and simple to self administer, crosses the blood brain barrier and is well tolerated (5). Termed "the cuddle hormone" and "liquid trust", it enhances generosity (7) and modulates EEG rhythms related to function of mirror neurons which have been implicated in the genesis of autistic spectrum disorders (8). Oxytocin facilitates unlearning for the acquisition of new learning and importantly has been described as 'the hormone that allows the brain to change itself'(9). Thus it might be expected to ameliorate the rigid cognitions and behaviors, social impairments and negative motivation for change which impede recovery in anorexia nervosa.

A randomized placebo controlled treatment trial of an inhaled metered dose of oxytocin versus normal saline will soon commence with anorexia nervosa patients at Northside Clinic and Royal Prince Alfred Hospital in collaboration with the Brain Mind Research Institute of Sydney University, the Maudsley Hospital and the Institute of Psychiatry, London UK. It will be funded by NSW Health and the Butterfly Foundation Research Institute and will be headed by Professor Janice Russell with Associate Professors Adam Guastella and Suzanne Abraham, Drs Sarah Maguire and Ranjani Uptala-Kumar and Professors Janet Treasure, Ulrike Schmidt and Dr Kate Tchanturia from London.

It is hypothesized that oxytocin given twice daily for six weeks will reduce social anxiety and cognitive rigidity with enhanced motivation for change and clinical progress in the treated group. This could offer an exciting and much needed, breakthrough in the treatment of anorexia nervosa.

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