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Opinion Article

The Impact of Oxytocin on Sexual Function Components

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DESCRIPTION

Does the release of Oxytocin (OXT) cause ejaculation in men as well as parturition and milk ejection in women? The hypothalamic Para Ventricular Nucleus (PVN), which is thought to be a center for autonomic control, has been demonstrated to have physiological and functional sex differences. It is engaged in a wide range of processes, including stress, hunger, bodily energy balance, blood pressure, heart rate, and sexual activity, including penile erection, and has a very complicated architecture. OXT is primarily generated by magnocellular neurosecretory cells in the PVN nucleus of the hypothalamus, and it is released into the blood via axon terminals in the neurohypophysis and magnocellular dendrites in the surrounding neuropil. The main actions linked to OXT are involved in the control of reproductive functions such as parturition, milk ejection, and sexual and maternal behaviour in females, which is why it is referred to as a feminine hormone.

On the other hand, it is widely known that a set of OXT-rgic neurons originating in the PVN and projecting to extra hypothalamic sites (e.g., the hippocampus, the medulla oblongata, and the spinal cord) functions on penile erection and sexual behaviour in male rats. It has been claimed that OXT has a good influence on a variety of sexual function components in males, including desire, erection, and orgasm. Discrete electrolytic lesions in the lateral and posterior parvocellular PVN remove this OXT rise in the cerebrospinal fluid after ejaculation.

Furthermore, when the degree of sexual interaction increases, so does expression in OXT neurons in the parvocellular region of the hypothalamic PVN. Chemical injuries to parvocellular PVN neurons diminish the density of OXT-containing fibers in the lower lumbar spinal cord (L5-L6 level) of rats considerably. OXT administered at high rates elicited a dose-dependent increase in the frequency of penile erections and yawning episodes in male rats, implying a physiological role for hypothalamic OXT in the control of such reactions. Because pre-treatment with OXT antagonists reduced penile erection and yawning in rats produced by either OXT or Apo morphine in a dose-dependent manner, dopamine may elicit these reactions via releasing OXT in vivo. Discrete electrolytic lesions in the lateral and posterior parvocellular PVN remove this OXT rise in the cerebrospinal fluid after ejaculation. Furthermore, when the degree of sexual interaction increases, so does expression in OXT neurons in the parvocellular region of the hypothalamic PVN. Chemical injuries to parvocellular PVN neurons diminish the density of OXT-containing fibers in the lower lumbar spinal cord (L5–L6 level) of rats considerably.

As per study, this neuronal system this novel peptide is used in the upper lumbar spinal cord (GRP) to stimulate the lower spinal autonomic and somatic centers that coordinate erection and ejaculation are examples of male reproductive functions. It is crucial to have a sexually dimorphic GRP system in the lumbar spinal cord. In the control of male sexual function, revealing a hitherto unknown role for GRP in mammalian sexual behaviour.

Notably, it is discovered that OXT had an axonal distribution. There is a male-dominant sexual dimorphism in the lumbar spinal cord. In rat Furthermore, OXT binding and particular OXT expression receptors were found in the interaction points of spinal GRP neurons. A previously unreported observation.

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