Use of Psychoactive Agents in the Treatment of Sexual Dysfunction

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Summary

Sexual function can be subdivided into phases of sexual desire, penile erection, ejaculation and orgasm. Dysfunction of these processes is manifest as disorders that include hypoactive sexual desire, male erectile dysfunction, premature and retarded ejaculation, and anorgasmia. These disorders can be primary in aetiology or can be caused by a number of psychoactive drugs including, commonly, antidepressants.

At present, sexual dysfunction is rarely treated with pharmacological agents. The usual approach consists of psychotherapy. However, in recent years, more interest has arisen in treating disorders of sexual function with psychopharmacological drugs, particularly sexual dysfunction that is the adverse effect of antidepressants.

Clinical reports suggest that primary premature ejaculation can be successfully treated with clomipramine and selective serotonin (5-hydroxytryptamine; 5-HT) reuptake inhibitors. At present, only a few oral medications have been shown to be useful in the treatment of erectile dysfunction (including yohimbine and trazodone), although these have not been developed specifically for this indication. The pharmacological treatment of primary retarded ejaculation and female primary anorgasmia still offers no efficacy. There are, on the other hand,
The neurobiological research and neuro-psychopharmacological treatment of sexual disorders can be defined as ‘neurosexology’. This is a new concept in neuropsychiatry and medical sexology. As an inter-disciplinary field of psychiatry, neurology, neuropsychopharmacology and animal brain research, neurosexology encompasses research into the neurobiological substrates of sexual function and dysfunction.

At present, we are on the threshold of initiating successful treatments for sexual dysfunction using psychoactive drugs. The purpose of this article is to review the status of current knowledge in this area and to provide some general strategies for the pharmacological treatment of sexual dysfunction. However, because there have been only a few controlled clinical trials that have investigated the effects of drugs on human sexual function, and considering the limited knowledge available at this time, caution is recommended with implementation of any of the treatments described.

Sexual dysfunction can be primary or secondary, e.g. caused by drug treatment. Psychoactive drugs may affect sexual function. Such effects have been reported with the use of antipsychotics, lithium, monoamine oxidase inhibitors (MAOIs), benzodiazepines and antidepressants. Generally, these sexual effects have a negative connotation, i.e. are described as adverse effects, because they are undesirable. But, in the case of primary sexual dysfunction, some psychoactive drugs may be used as treatments.

1. Sexual Function

A basic understanding of the neurophysiology of sexual function is necessary in order to understand the mechanisms by which drugs might influence sexual function. Sexual function may be subdivided into:
- sexual desire
- sexual excitement
- penile erection
- lubrication of the vagina
- ejaculation
- orgasm
- sexual satisfaction.

1.1 Sexual Desire

Sexual desire or libido may be defined as a person’s interest in initiating or having sexual intimacies. Although a cerebral substrate is definitely assumed, at this time little is known of the neurobiological mechanisms underlying sexual desire. For the maintenance of libido, a certain amount of plasma testosterone is necessary in men. The production and release of testosterone is dependent on the plasma level of prolactin. Hyperprolactinaemia decreases testosterone release and, therefore, is associated with a reduced libido. Hypothalamic dopamine inhibits the release of pituitary prolactin and, as a result, influences the libido positively. Serotonin (5-hydroxytryptamine; 5-HT), on the other hand, increases the release of prolactin and may cause a diminished libido. High levels of prolactin also inhibit sexual desire in women.

Drugs that stimulate the release of prolactin and decrease sexual desire include antipsychotics (e.g. phenothiazines and butyrophenones), tricyclic antidepressants (e.g. imipramine), antihypertensives (e.g. reserpine) and opiates (e.g. morphine). Conversely, drugs that inhibit prolactin release, such as levodopa and dopamine receptor agonists (e.g. bromocriptine), might increase sexual desire. Indeed, data from animal research indicate that...