Erectile dysfunction in cerebrovascular stroke patients

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Erectile dysfunction is a common problem in cerebrovascular stroke patients. It may have a significant impact on the quality of life of sufferers and their partners. Consequential to stroke is often low self-esteem, depression, anxiety, rejection by a partner or spouse, impotence, problems communicating due to aphasia or unwillingness to communicate, and role changes. Mobility problems, fatigue, previous illnesses, and medication also have a negative effect on sexual activity. However, it is often neglected during rehabilitation along with the psychological issues that may affect sexual dysfunction.

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Erectile dysfunction (ED) is the inability to attain and maintain an erection sufficient for satisfactory sexual performance. Although a benign disorder, it can have a significant impact on the quality of life of sufferers, partners, and their families. It is also important to consider the physical and psychosocial health of the person who has the condition. Patients should be properly assessed and investigated before embarking on a treatment [1].

ED is a male health problem of global dimensions and is a symptom of many clinical conditions and certain risk factors [2].

The prevalence of ED varies widely in studies from different countries. It was estimated to be 18.4% in men aged more than or equal to 20 years in the USA [3], 49.4% in Canada [4], and 63.6% in Hong Kong [5]. In a study in Qatar the prevalence of ED among Qatari patients was 66.2% among hypertensive patients and 23.8% among nonhypertensive controls [6].

Aging, vascular insufficiency, psychogenic and neural disorders, systemic illness such as diabetes mellitus, hormonal derangement, and side-effects of medications may result in ED. ED has a profound negative impact on the quality of life and on a person's self-esteem [7].

The cerebral cortex influences sexual arousal and response and the limbic system and hypothalamus play an important role in the integration and control of reproductive and sexual functions [8].

Cerebrovascular stroke is a rapidly developing clinical sign of brain dysfunction due to focal or global disruption with symptoms that last for more than or equal to 24 h and can cause death, without any other cause other than vascular [9].

It occurs when part of the brain does not receive the needed blood flow for one of two reasons: either the blood supply to part of the brain is suddenly interrupted (ischemia), or because a blood vessel in the brain ruptures and blood invades the surrounding areas (hemorrhage). The brain is the central information-processing organ of the body responsible with the control of multiple complex functions [10].

In 2010, the worldwide prevalence of this disease was 33 million, with 16.9 million people having a first stroke. This condition kills nearly 129 000 people a year, it is considered the no. 5 cause of death and the leading cause of adult disability [11].

The sequelae of stroke include dysphasia, hemiparesis, changes in cognition, and changes in the ability to express emotions, all of which may impact the ability of a stroke survivor to perform activities of daily living, including sexual activity [12]. In this sense, neurological disorders are frequently responsible for sexual disorders. Their impact can be major and could rank first in the concerns of patients with a neurological handicap [13]. Consequently, impaired sexual activity

is common after ischemic stroke [14]. Therefore, ED is a common sequela after stroke [15].

Stroke lesions may disturb central autonomic network structures and pathways that contribute to erection and physical impairment such as motor weakness, spasticity, bladder, or bowel dysfunction may constitute physical handicaps of sexual activity [16,17].

Research into poststroke sexuality has found a high prevalence of sexual changes across a diverse range of countries, despite the potential for very different sexual attitudes and beliefs between these cultures. In a study involving Nigerian stroke survivors attending a physiotherapy clinic, Akinpelu *et al.* [18] found that 94.8% of the participants reported dysfunction. Similar findings have been found in stroke survivors in Turkey [19] and Korea [20].

Depression is common after stroke and anxiety, apathy, and emotional lability are also observed in some individuals. These mood difficulties sometimes appear to be related to the location of a stroke, and in others appear to be a reaction to the experience of having a stroke and its consequences. Stroke survivors who experience depression appear to be more likely to have sexual issues poststroke [21]. Akinpelu *et al.* [18] found depression had a significant impact of poststroke sexual functioning and depressed individuals were more likely to experience sexual dissatisfaction and ED.

Problems with sensation are other factors which affect sexual dysfunction [22]. Fatigue may reduce autonomy and cause feelings of guilt and also the patient's outward appearance, in particular facial asymmetry and drooling, may cause problems and reluctance for physical contact with their spouse. Vander *et al.* [23] suggest that there is a relationship between poststroke fatigue and depression.

New medications such as centrally acting antihypertensive agents, β-blockers and potassium sparing diuretics, or antidepressants may have side effects that deteriorate sexual function [24,25].

β-Blockers and diuretics have the most negative effects on sexual performance with ED being associated with propranolol and thiazide diuretics [8].

Antidepressants, anticonvulsants, and antihypertensives have been shown in a few studies to affect sexual dysfunction following stroke [26].

Dysfunction increases with age, the common risk factors being general health, psychiatric and psychological disorders, and sociodemographic conditions [27].

Increased weight, diabetes, and cardiovascular disorders are also associated with impaired sexual functioning [28]. Bener *et al.* [26] found that the risk of poststroke ED increased with age, obesity, presence of hypercholesterolemia, diabetes and hypertension and use of associated medications.

Tamam *et al.* [19] found that an inability to discuss sexuality with their partners was explanatory for the decline in coital frequency and sexual satisfaction, along with unwillingness for sexual activity. Cognitive impairments may impact negatively the sexual life of a couple and change how a partner views the stroke survivor [29].

Systemic disorders lead to decreased libido and ED by affecting the sexual function in men. Hormonal imbalances in systemic disorders are thought to arise from the testes or the hypothalamic–pituitary–testicular pathway [30].

Loss of sexual desire and function has been associated with decreased testosterone levels, which along with a decrease in libido and erectile function in men are also caused by aging. Sexual dysfunction can manifest as problems with physical performance (e.g. ED in men) or as problems with reduced sexual desire or arousal, inability to achieve orgasm, discomfort during sex, anxiety about performance, or sex not being pleasurable [31].

Early hospital admission may reduce the potential negative consequences of a stroke. The development of thrombolysis treatment has also increased the proportion of individuals who survive a stroke. Health professionals should provide opportunities for patients to express their emotions following a stroke and should initiate the topic of poststroke sexuality. In this way, it is important to use the assessment tools which can be easily used in practical configuration and can provide a starting point for sexual counseling; in addition, it may indicate a desire for additional information and advice from health professionals.

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There are no conflicts of interest.

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