Effect of Anemia &its management on Libido and Sexual Dysfunction on Regular Hemodialysis Patients

Theses

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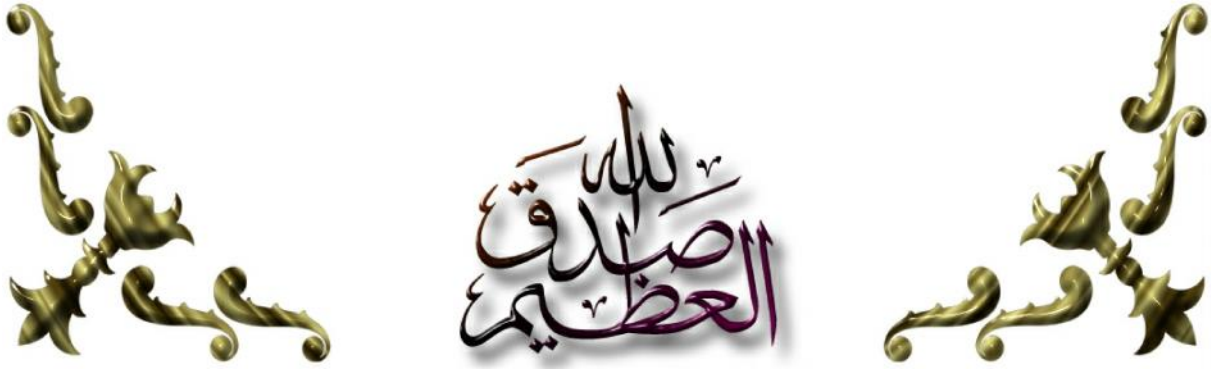

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List of abbreviations:

AUA	American Urological Association
BUN	Blood Urea Nitrogen
Ca	Calcium
CACS	Coronary Artery Calcium Score
CRF	Chronic renal failure
CVD	Cardiovascular diseases
DM	Diabetes mellitus
DRIVE	the Dialysis Patients' Response to IV Iron with Elevated Ferritin
DSM–IV	the Diagnostic and Statistical Manual of Mental Disorders, 4Th edition
DSM-IV-TR	The diagnostic and statistic manual of mental disorder, 4Th edition-text revision
ED	Erectile dysfunction
EPO	Erythropoietin
ESA	Erythropoiesis-stimulating agent
ESRD	End stage renal disease
ESSTIs	Ejaculoselective serotonin transport inhibitors
FSD	Female sexual dysfunction
FSH	Follicle-stimulating hormone
HB	Hemoglobin
HD	hemodialysis
GFR	Glomerular filtration rate
IIEF	International Index of Erectile Function
IELT	an intravaginal ejaculatory latency time
JKC	the Jeddah Kidney Center
Kt/v	Urea clearance
LH	Luteinising hormone
MCS	mental component score
MHD	maintenance hemodialysis
MUSE	Medicated Urethral System for Erection
NIH	National Institute of health
NKF-KDOQI	the National Kidney Foundation-Kidney Disease Outcome Quality Initiative
NO	nitric oxide
PCS	physical component scores
PDE	Phospho di esterase
PE	Premature ejaculation
PGE1	Prostaglandin E1
Ph	phosphorus

PRL	prolactin level
PSA	prostate-specific antigen
QoL	quality of life
RCT	randomized controlled trial
rHuEP	Recombinant human erythropoietin
S.Creatinine	Serum creeatinine
SF-36	Short form 36 Health survey
SHIM	Second harmonic imaging microscopy
SSRIs	selective serotonin reuptake inhibitor
TCAs	Tricyclic antidepressants
TSAT	transferrin saturation
VCDs	Vacuum constriction devices
VIPs	Vasointestinal polypeptides
5-HT2c	5-hydroxytryptamine 2C

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INTRODUCTION

Disorders of the reproductive system and menstrual abnormalities often associated with loss of libido and inability to reach orgasm are common in adults of both sexes with end-stage renal disease. **(Filocamo *et al*., 2009).**

The two words that mean sexual dysfunction, impotence and erectile dysfunction(ED), express two different concepts. Impotence is a general male sexual dysfunction that includes libidinal, orgasmic, and ejaculatory dysfunction. ED is the inability to achieve or maintain an erection sufficient to allow satisfactory sexual intercourse and is part of the general male sexual dysfunction.

Uremic men of different ages report a variety of sexual problems, including sexual hormonal pattern alterations, reduction in or loss of libido, infertility, and impotence. In evaluating and treating sexual dysfunction, nephrologists must consider factors involved in its pathogenesis, such as hypothalamic-pituitary-gonadal axis alterations, psychological problems related to chronic disease, secondary hyperparathyroidism, anemia, autonomic neuropathy, derangements in arterial supply or venous outflow, and the normal structure of cavernous body smooth muscle cells**.(Bellinghieri *et al*.,2001)**

Advanced chronic kidney disease is associated with impaired spermatogenesis and testicular damage. Semen analysis typically shows a decreased volume of ejaculate, oligo- or completes a zoospermia, and a low percentage of motile sperm erectile dysfunction (ED) is also common in patients with chronic renal failure (CRF) and is observed in excess of 50% of these patients. There have been ongoing improvements in survival and quality of life after renal transplantation. One of the most

impressive aspects of successful renal transplantation in the young people is the ability of the male patient to father a child **(Lessan-Pezeshki *et al*.,2008)**

Bancroft (1989) designed a scheme to symbolize the complexity of the sexual response system, which contains emotional, cognitive and genital components and any failure in one of these areas may lead to sexual dysfunction. Sexual dysfunction is frequent in patients with chronic renal failure (CRF) and seriously impairs their quality of life (QoL). Since the 1970s, sexual function has been studied in uraemic patients. Currently, with advances in medical care (renal replacement therapies) the survival of patients with CRF has been prolonged. Physical functioning and QoL have become more and more important. Sexual function is just one aspect of physical functioning.

Diagnosis and treatment of sexual dysfunction should be included in the global health assessment of uraemic patients. **(Feldman *et al*., 1994)**.

- Male Sexual Dysfunction:

-Physiology and anatomy of male sexual cycle:

The male sexual cycle can be considered to have 4 phases: sexual desire (libido), arousal (erection), ejaculation (orgasm), and detumescence (penile flaccidity) **(Bella &Lue ; 2008).**

Erections usually begin with sexual stimulation and subside with ejaculation or after stimulation ends. The subsequent flaccid state remains until the next sexual stimulation or nocturnal erection occurs. Psychogenic and reflexogenic mechanisms play a role in this chain of events. Psychogenic erections are triggered centrally in response to visual, auditory, olfactory, or imaginary stimuli. Reflexogenic erections are brought on peripherally by stimulation of sensory receptors on the penis, involving somatic and parasympathetic efferent. There are 3 distinct components for normal ejaculation: emission, ejaculation, and orgasm. Emission is the contraction of seminal vesicles and the prostate with expulsion of sperm and seminal fluid into the posterior urethra. The ejaculation phase involves relaxation of the external urinary sphincter and pulsatile contractions of the bulbocavernosus and pelvic floor muscles. Ejaculatory inevitability or the point at which ejaculation cannot be stopped. Orgasm is the moment of most intense pleasure in sexual intercourse.

There are many types and causes of male sexual dysfunction e.g:

- Decrease libido:

Clinicians should take into account both partners' willingness for sexual activity as they age. Men and women experience a decline in sexual desire as they age, but the effect tends to be larger in women. Exploring sexual interest and discussing the normal aging process with

the couple may help guide treatment decisions. Decreased libido may only be affecting 1 partner and may not be of concern to the other. **(Beutel *et al* .,2008)** .

Medication history is important in the diagnosis of decreased libido. Antidepressants are well known to affect libido, especially SSRIs, which are the most widely prescribed antidepressants and have significant effects on arousal and orgasm. **(Kennedy &Rizvi ;2009) .**

Antihypertensive medications such as centrally acting antihypertensive agents (methyldopa, clonidine), nonselective b-adrenergic blockers (propranolol), and potassium-sparing diuretics (spironolactone) can decrease libido **(Fogari *et al* ., 1998)** .

Opioid medications can decrease libido, especially with prolonged use. (**Katz &Mazer; 2009).**

Use of recreational drugs (including anabolic steroids) and alcohol should also be assessed as potential causes of decreased libido**.(Lue *et al* ., 2004)** .

New attention has been given to occupational exposures and the risk of developing sexual dysfunction. Bisphenol-A (BPA), a chemical used in some plastics, has been linked to an increase in self-reported decreased libido (**Li *et al*., 2010)**.

Underlying medical conditions can decrease libido as a result of the medications used to treat the disease, symptoms related to the ailment, psychological stressors of illness, and general concerns regarding health and safety with sexual activity. Symptoms of hypogonadism may include lack of male hair growth, gynecomastia, anosmia (Kallmann syndrome), headaches, or vision changes (pituitary tumors).A history of orchitis (such as from mumps) can cause testicular atrophy**. (Lue, 2000))**

The physical examination should include an assessment of body habitus and secondary sexual characteristics (such as for Klinefelter syndrome), and assessment of the cardiovascular, neurologic, and genitourinary systems, including penile, testicular, and rectal examinations. Blood pressure and heart rate should be measured. **(Lue *et al*., 2004).**

Laboratory examination should include evaluation for underlying disease and age-appropriate screening tests based on the medical history and physical examination findings. A morning blood draw may help avoid the daily cycle in hormonal levels. Tests may include fasting glucose, lipids, testosterone and free testosterone, luteinizing hormone, and estradiol (in obese patients) (**Hatzichristou *et al*., 2004)**.

Treatment of decreased libido:

Because of the many causes of decreased libido, diagnosis can be imprecise, and initial treatment may not be successful. Medical, social, and psychological treatment options should be presented and initiated on the preference of the patient and partner. Any underlying medical problems, (eg, hypertension, diabetes) should be treated. **(Basson *and* Schultz; 2007)**.

Specific attention should be paid to the treatment of depression. Therapy should be initiated to see whether libido improves, with the understanding that many antidepressant medications can decrease libido **(Kennedy & Rizvi ;2009).**

Despite lack of evidence, many clinicians recommend individual or couples' psychotherapy as a treatment option for decreased libido. Therapy may be able to reveal the stressors and concerns contributing to the problem. Decreased libido can be the result of, or the cause of,

significant stress. Exploring fears, concerns, and misconceptions of sexual function with the couple may aid in treatment. There is a paucity of medication trials related to male decreased libido, and there are no FDA-approved medications for decreased libido in men or women. Medication treatment should initially be directed toward underlying medical conditions eg (diabetes, hypothyroidism, and hypertension) to determine whether adequate treatment improves sexual desire. Testosterone levels decrease as men age, and some older men exhibit serum total testosterone levels that are less than the normal range for younger men. **(Harman *et al.*, 2001).**

Testosterone therapy has been used off-label for years in women with decreased libido, especially in postmenopausal women. **(Davis ,2010)**

Men with decreased libido and low testosterone levels tend to improve with testosterone supplementation. (**Gruenewald &Matsumoto; 2003)**

However, there are no good studies of supplementation in men with normal testosterone levels.

Testosterone supplementation should be used with caution, because long-term effects have not been well studied. Initiation of treatment should include a thorough discussion of risks and benefits.

-Erectile dysfunction:

ED is the persistent inability to attain or maintain a penile erection sufficient for satisfactory sexual performance (**Droller *et al* 1993).**

The term ED is preferable to impotence because the latter has pejorative implications. ED also describes the problem more accurately, because it is possible to maintain sexual libido, reach orgasm, and ejaculate, despite the inability to achieve or maintain an erection (**Montague *et al*,. 2005)** .

There is no consensus on how often, or for what length of time, the problem has to occur to meet this definition. Duration of greater than 3 months has been suggested as a reasonable clinical guideline **(Feldman *et al*,. 1994).**

The diagnostic and statistic manual of mental disorder classification (DSM-IV-TR) suggests the following diagnostic criteria for male erectile disorder:-

1. There is a persistent or recurrent inability to attain, or to maintain until completion of the sexual activity, an adequate erection.
2. The disturbance causes marked distress or interpersonal difficulty.
3. The ED is not otherwise accounted for by another Axis I disorder (other than a sexual dysfunction) and is not caused exclusively by the direct physiologic effects of a substance (eg, a drug of abuse, a medication) or a general medical condition.

Causes of ED:

A-organic causes:

Cigarette smoking, obesity, sedentary lifestyle, pelvic radiation, pelvic trauma, and postoperative complications of pelvic surgery, Some investigators have suggested bicycling as another risk factor for ED **(Miller, 2000).**

One study reported that nocturnal erections decreased with increased perineal pressure from the bicycle's saddle **(Goldstein *et al*,. 2007).**

Some bicyclists have numbness of the perineum after riding, suggesting perineal nerve compression or vascular ischemia, but this link is controversial and more research is needed **(Asplund *et al*,. 2007).**

B-Psychogenic Causes: