Erectile Dysfunction: The Hard Truth

Erectile dysfunction (ED), or impotence, is a condition defined by difficulty getting or keeping an erection firm enough for sexual intercourse. Occasional difficulty with erectile function does not necessarily warrant thorough evaluation and treatment. However, prolonged issues with ED can indicate the presence of more serious medical conditions, such as heart disease, poorly controlled diabetes, or low testosterone levels (hypogonadism), and should be evaluated.

Causes of ED:
The cause of erectile dysfunction is usually classified as organic vs. psychogenic.

**Organic causes can include:**
- Heart disease/atherosclerosis
- Diabetes
- Neurological conditions such as Parkinson’s disease or Multiple Sclerosis.
- Low testosterone level, known as hypogonadism
- Tobacco, alcohol, drug abuse
- Medication side effects (antidepressants, narcotic pain medication, some prostate cancer medications, etc.)
- Post-prostatectomy (removal of prostate due to presence of cancer), and in some cases, following surgery for treatment of benign enlargement of the prostate (TURP)
- Surgeries or injuries affecting the pelvis or spinal cord

Psychogenic causes could include performance anxiety, history of abuse, or generalized anxiety or depression. Some patients may present with a combination of any of these causes.

Diagnosis:
The most important components of diagnosis of erectile dysfunction include detailed medical/surgical, psychological, and sexual history and a thorough physical examination. This should include defining the problem and clearly distinguishing ED from complaints regarding ejaculation and/or orgasm. The patient and partners expectations should be established during this phase of the evaluation process, as well. Also important in the evaluation process is checking basic labs, including serum testosterone, prostate specific antigen (PSA), and a complete blood count. These labs can contribute to identifying the source of erectile dysfunction, and can also act as a pre-treatment baseline in patients who are found to have low testosterone levels.
Treatment:

The management of erectile dysfunction begins with identification and treatment of any treatable organic or psychogenic sources. In some cases, treating these conditions may be enough to correct the erectile function. If the patient is still experiencing impotence, therapeutic options include, oral medications, such as Viagra, Cialis, Levitra, Stendra, etc., intra-urethral suppositories, injection therapy with medications used to dilate the blood vessels in the penis, vacuum erectile devices, and the most invasive option of penile prosthesis. The main contraindication regarding these treatment options is nitrate use, such as nitroglycerine for chest pain, with any of the oral ED medications, as this combination of medications can cause severe drop in the blood pressure. Any of the pharmacological treatment options also carry the risk of priapism, which is an erection lasting longer than 3-4 hours. This condition requires urgent evaluation and treatment by the urologist or in the emergency department in order to prevent permanent damage to the blood flow in the tissue of the penis.

Hypogonadism

Male hypogonadism is the condition in which the body does not produce sufficient amounts of testosterone. This process can occur during fetal development or later in life. Congenital (before birth) hypogonadism involves poor testosterone production during development resulting in impaired growth of the external genitalia. This could present with a genetically male child presenting with female genitalia, ambiguous genital development, or underdeveloped male genitalia. Childhood hypogonadism can result in delayed puberty or abnormal development, including decreased muscle mass, impaired growth of body hair, disproportionate growth of the limbs in relation to the trunk, and even gynecomastia. Adult males suffering from hypogonadism may present with symptoms of fatigue, erectile dysfunction, decreased muscle or bone mass, low libido, depression, or infertility.

Diagnosis:

Male hypogonadism is characterized as either primary or secondary. Primary hypogonadism results from a problem in the testicles. Common causes of primary hypogonadism include, Klinefelter syndrome (genetic abnormality), uncorrected undescended testicles (testicle does not drop into scrotum from pelvic cavity during infancy/childhood), Mumps Orchitis (inflammation of the testicles related to the Mumps), injury to the testicles, or chemotherapy or radiation treatment in the area.

Secondary hypogonadism is caused when there is an issue with hormone production at the level of the hypothalamus or pituitary gland, which works to stimulate the testicles to produce testosterone. Causes of secondary hypogonadism can include pituitary disorders, HIV/AIDS, inflammatory disorders that affect pituitary function, such as Tuberculosis, medications (opiates, in particular), obesity, and normal aging.

Initial diagnosis of hypogonadism includes a thorough history and physical exam, as well as presence of low serum testosterone level on one or more blood test. Testosterone levels vary throughout the day.
and are generally highest first thing in the morning, so blood testing is recommended early in the day. Once it has been determined that a patient is hypogonadic, further evaluation with serum hormone testing, pituitary imaging, and semen analysis may be carried out by either the urologist or endocrinologist to determine whether the hypogonadism is primary or secondary in nature.

**Treatment:**

Treatment of male hypogonadism is dependent on whether it is of primary or secondary origin. Hypogonadism caused by testicular failure is generally treated by hormone replacement in the form of topical gels, testosterone injections, medicated patches, or even implantable pellets under the skin. This type of treatment can improve sexual function, energy level, libido, muscle strength, and can help prevent bone loss. Risks of testosterone replacement therapy include accidental skin to skin transfer when using the topical gels, sleep apnea, limiting sperm production, stimulating growth of prostate cancer that already exists, Polycythemia Vera (blood disorder), and blood clots. Labs should be carefully monitored in anyone undergoing hormone replacement therapy to detect the presence of any of these conditions early. Abnormal rise in PSA (Prostate Specific Antigen) should trigger immediate referral to urology for further evaluation of possible undiagnosed prostate cancer. Complete blood count should also be checked routinely to evaluate for rise in hemoglobin or hematocrit, potentially indicating early Polycythemia Vera. Testosterone level should be checked at least every three months until dosing has been adjusted to keep level in the therapeutic range. Once this is obtained, testosterone can be checked every six months.

Testosterone repletion is not appropriate for all men. Further investigation is ongoing concerning the relative safety of testosterone, but there is a clear benefit for some men.

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