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Premature Ejaculation: An Updated Overview of Etiology and Diagnosis

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Abstract

Premature ejaculation (PE) is very common disease that affect more than 20% of menand the most common self-reported male sexual disorder. The two most relevant and evidence-based definitions of PE are those of International Society for Sexual Medicine (ISSM) and American Psychiatric Association. Both definitions agree on the chronic aspect of this disorder and the relatively short time interval between penetration and ejaculation (≤1min), the absence of voluntary control of ejaculation, and the negative consequences, such as distress in nearly all vaginal penetrations.

Key words:Premature Ejaculation.

Neuro-Anatomy

Pudendal nerve arises from the sacral plexus in the pelvis. It is the main nerve of both perineum and external genitalia. It is oregenated from S2, S3, and S4. It gives raise to some branches that innervate the penis, including the dorsal nerve of the penis **(1)**. It relays signals from the external genitalia and the skin around the anus and perineum. It also carries motor axons to various pelvic muscles as well as the external urethral sphincter, the external anal sphincter, and bulbospongiosus muscle **(2).**

As it passes throw the pudendal canal, the pudendal nerve gives raise to several branches. It first gives off the inferior rectal nerve followed by the perineal nerve and, finally, the dorsal nerve of the penis. The dorsal nerve of the penis or clitoris is a smaller terminal branch of the pudendal nerve. First in the pudendal canal above the internal pudendal vessels the above-mentioned branch runs forward and then reaches the deep perineal space between these vessels and the pubic arch. After branching off of the pudendal nerve, the dorsal nerve of the penis runs along the inferior ischial ramus; then, it is joined by the deep dorsal vein at the base of the penis **(1)**. Then it passes through the lateral part of the oval gap between the apex of the perineal membrane and arcuate publicligament and runs on the dorsum of the penis and clitoris and ends in the glans penis and glans clitoris.

In addition to the efferent fibers of the dorsal nerve of the penis, this nerve includes afferent fibers that innervate the penile skin, clitoris in females, and also the glans penis. These afferents propagate sensory signals to the central nervous system that are critical to achieving an erection and sexual function **(3).**

Premature Ejaculation

Though PE is a non-life-threatening condition, it has a serious impact on patient and partner quality of life. Various definitions of PE have been used by different researchers, and include partner satisfaction, male voluntary control, duration of ejaculatory latency, and number of intra-vaginal

thrusts **(4).**

The **International Society of Sexual Medicine (ISSM) (18)** defined the premature ejaculation as, 'a male sexual dysfunction characterised by ejaculation which always or nearly always occurs prior to or within about one minute of vaginal penetration; and inability to delay ejaculation on all or nearly all vaginal penetrations; and negative personal consequences, such as distress, bother, frustration and/or the avoidance of sexual intimacy'.

It must be noted that this definition is limited to men with lifelong PE who engage in vaginal intercourse since there are insufficient objective data to propose an evidence-based definition for acquired PE **(5)**.

American Psychiatric Association agreed on the **ISSM** defenetion of the disorder in some points such as: chronic aspect of this disorder and the relatively short time interval between penetration and ejaculation (≤1 min), the absence of voluntary control of ejaculation, and the negative consequences, such as distress in nearly all vaginal penetrations **(5)**.

The American Urological Association Guideline (6) defined the PE as poor ejaculatory control, associated bother, and ejaculation within about 2 minutes of initiation of penetrative sex **(6).**

In the World Health Organization's International Classification of Diseases-10 (ICD-10), PE is defined as 'the inability to delay ejaculation sufficiently to enjoy lovemaking, which is manifested by either an occurrence of ejaculation before or very soon after the beginning of intercourse (if a time limit is required: before or within 15 seconds of the beginning of intercourse).

Etiology:

The final common pathway in the genesis of PE appears to be either a hyposensitivity of 5-HT2C receptors or a hypersensitivity of the 5-HT1A receptors **(7)**.

It is believed that the ejaculatory threshold for men with low 5-HT levels and/or 5-HT2C receptor hyposensitivity may be genetically set at a lower point, resulting in more rapid ejaculation.

In contrast, men with a high set point may experience delayed ejaculation. This theory is supported in part by research that has demonstrated the efficacy of SSRI medications in inhibiting PE**. (8).**

Epidemiology:

Studies indicate that PE is the most common male sexual disorder **(9).**

According to recent studies, 20%–30% of the male population is affected by PE at any one time, and some researchers believe that up to 3 out of 4 men experience PE sometime during their lives, although the majority never raise the subject with their physician. **Laumann et al. (10)** analyzed data that included 1410 men and 1749 women aged 18–59 years and reported the prevalence of PE as approximately 30%. The Global Study of Sexual Attitudes and Behaviors investigated 13,618 men in 19 countries aged 40–80 years regarding aspects of sex and relationships **(10).**

This survey reported that PE occurs in nearly 30% of men worldwide. A web-based study by **Rowland et al. (9)** that included 2648 male participants reported a prevalence of "possible PE" as 16.2% and "probable PE" as 16.3%. In reviewing the relationship between the prevalence of PE and ethnicity, significant PE was reported by 29% of Hispanics, 21% of non-Hispanic blacks, and 16% of non-Hispanic whites.

In their analysis of data**, Laumann et al. (10)** noted that PE was more prevalent amongst black men (34%) and white men (29%) than among Hispanic men (27%).

Rosen et al. (11) conducted a multinational Internet survey among men in Italy, Germany, and the United States. Of 8860 men aged 25–70 years who completed questions 1 through 54 of the survey on general health and sexual attitudes, 26% overall were classified as having PE.

Strangely in a study conducted in UK in **(12)** by **Daniel Richardson et al**. aiming to identify whether the PE is connected to race and country of origin ,the study was done on a sample of 128

patients with PE according to DMS-IV Guide lines and when the clinical demographic data was collected about 60% of them found to be of Islamic and Asian origins, the main Couse is not yet clear but it was identified in the same study that it might be because of psychosocial, familial, or genetic influences.

Classification of PE:

- Premature ejaculation is classified as **'lifelong' (primary)** or **'acquired' (secondary)**.

[1] **Lifelong PE** is characterized by onset from the first sexual experience, remains so during life and ejaculation occurs too fast (before vaginal penetration or < 1-2 min after) **(13).**

[2] **Acquired PE** is characterized by a gradual or sudden onset following normal ejaculation experiences before onset and time to ejaculation is short (usually not as short as in lifelong PE) **(13).**

- Recently, two more PE syndromes have been proposed:

Natural variable PE is characterized by inconsistent and irregular early ejaculations, representing a normal variation in sexual performance **(7)**.

Another classification invokes the terms "global" or "universal" (e.g., occurs regardless of situation or partner) or "situational" (e.g., limited to certain situations or partner). Lifelong (primary) or global PE suggests an organic basis that would be optimally treated by pharmacotherapy **(14).**

Diagnosis of PE:

Diagnosis of PE is based on the patient's medical and sexual history. History should classify PE as lifelong or acquired and determine whether PE is situational (under specific circumstances or with a specific partner) or consistent **(15).**

Special attention should be given to:

[1] The duration time of ejaculation.
[2] Degree of sexual stimulus.
[3] Impact on sexual activity and QoL.
[4] Drug use or abuse.

- There are several overlapping definitions of PE, with four shared factors, resulting in a multidimensional diagnosis:

1- Time to ejaculation assessed by IELT
2- Perceived control
3- Distress
4- Interpersonal difficulty related to the ejaculatory dysfunction

Intra-vaginal ejaculatory latency time (IELT):

- Perceived control over ejaculation has a significant direct effect on both ejaculation-related personal distress and satisfaction with sexual intercourse (each showing direct effects on interpersonal difficulty related to ejaculation) **(15).**

- In everyday clinical practice, self-estimated IELT is sufficient **(15)**.

PE assessment questionnaires:

Questionnaires that can discriminate between patients who have PE and those who do not:

- **Premature Ejaculation Diagnostic Tool (PEDT**): Five-item questionnaire assesses control, frequency, minimal stimulation, distress and interpersonal difficulty **(16).**
- **Arabic Index of Premature Ejaculation (AIPE):** Seven-item questionnaire developed in Saudi Arabia assesses sexual desire, hard erections for sufficient intercourse, time to ejaculation, control, satisfaction for the patient and partner, anxiety or depression **(17)**

A simple PE history algorithm that can be undertaken is as follows:

(1) Asking how long he has experienced PE, that is, whether it is lifelong or more recently acquired.
(2) Defining the IELT from a patient is useful, appreciating that some men overestimate this.
(3) Asking the patient to define whether his control over ejaculation is good, fair, or poor.
(4) Assessing the bother related to PE and the impact PE has on his relationship.

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