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Post-orgasmic Illness Syndrome: A Closer Look

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ABSTRACT

Background: Post-orgasmic illness syndrome (POIS) is a rare condition in which someone experiences flu-like symptoms, such as feverish, myalgia, fatigue, irritabilty and/or allergic manifestation after having an orgasm. POIS can occur either after intercourse or masturbation, starting seconds to hours after having an orgasm, and can be lasted to 2 - 7 days. The prevalence and incidence of POIS itself are not certainly known.
Reviews: Waldinger and colleagues were the first to report cases of POIS and later in establishing the diagnosis, they proposed 5 preliminary diagnostic criteria, also known as Waldinger's Preliminary Diagnostic Criteria (WPDC). Symptoms can vary from somatic to psychological complaints. The mechanism underlying this disease are not clear. Immune modulated mechanism is one of the hypothesis that is widely believed to be the cause of this syndrome apart from opioid withdrawal and disordered cytokine or neuroendocrine responses. POIS treatment is also not standardized. Treatments includeintra lymphatic hyposensitization of autologous semen, non-steroid anti-inflamation drugs (NSAIDs), steroids such as Prednisone, antihistamines, benzodiazepines, hormones (hCG and Testosterone), alpha-blockers, and other adjuvant medications.
Summary: This syndrome still needs more research to understand its mechanisms to obtainclearer treatment. Besides that, the clinician's awareness is needed to recognize this syndrome so that it is not misdiagnosed.

Keywords: POIS, Immune Modulated, Autologous Semen, Waldinger's Preliminary Diagnostic Criteria

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INTRODUCTION

Post-orgasmic illness syndrome (POIS) is a rare condition in which someone experiences flu-like symptoms, such as feverish, myalgia, fatigue, irritability, orallergic manifestation after having an orgasm.[1-3] This condition was first described by Waldinger and Schweitzer in 2002 which include two heterosexual male patients.[1]

POIS can occur either after intercourse or masturbation, starting seconds to hours after having an orgasm and can be lasted to 2-7 days.[1,3] This condition can be very disturbing and may reduce the quality of life, both the patient and their partner. Moreover, they have to abstain or schedule their sexual activities to avoid those vexatious symptoms.[1,3]

The prevalence and incidence of POIS itself are not certainly known. To date, only approximately 50 cases have been delineated in the literature and most of them are case reports.[3,4] National Institute for Health (NIH) in the United States classifies POIS as a rare disease.[5] However, as the criteria become clearer, it is not impossible that the number of patients reporting such symptoms will also increase.

Since the mechanism of POIS is not well understood, there is no clear effective treatment until now.[6] This review aims to provide a closer look at the definition and criteriaof POIS and discuss some updates on potential management options.

Definition and Criteria of POIS

In 2002, Waldinger and Schweitzer were first described the term "POIS", in which two men suffered from several symptoms after ejaculation, including exhaustion, flulike symptoms, erythema of the skin, and mental disturbances.[1]

Moreover, when Waldinger and colleagues investigated 45 Dutch Caucasian men who reported several symptoms similar to POIS, they proposed 5 preliminary diagnostic criteria—also known as Waldinger's Preliminary Diagnostic Criteria (WPDC)—to discern the spectrum variation of this condition (Table 1).[2]

Table 1. Five Preliminary Diagnostic Criteria of POIS[1]

Criterion	Description
1	≥ 1 of the following symptoms - General: extreme fatigue, exhaustion, palpitation, anomic aphasia, incoherent speech, dysarthria, concentration difficulties, irritability, hyperacusis, photophobia, depressed mood - Flu-like: fever, extreme warmth, perspiration, chills, cold intolerance - Head: headache, fogginess, heaviness in the head - Eyes: burning, conjunctival injection, blurry vision, eye pain, watery discharge, eye irritation and itchiness - Nose: nasal congestion, rhinorrhea, sneezing - Throat: dirty taste in mouth, dry mouth, sore throat, tickling cough, hoarse voice - Muscle: muscle tension in the back or neck, muscle weakness and pain, heaviness in the legs, muscle stiffness
2	All symptoms occur immediately (eg, seconds), soon (eg, minutes), or within a few hours after ejaculation that is initiated by coitus and/or masturbation and/or spontaneously (eg, during sleep)
3	Symptoms occur always or nearly always (ie, > 90% of ejaculation events)
4	Most of these symptoms last for ~ 2-7 days
5	Symptoms disappear spontaneously

The study conducted by Waldinger et. al. shows that people with POIS reported a wide spectrum of the symptoms.[2] On the other hand,

several symptoms were quite dominant in the study, such as feverish, fatigue and difficulties to concentrate.

Waldinger et. al. also proposed a classification based on the onset of the occurrence.[2] Primary typeof POIS is a term used to describe POIS that manifests from the first ejaculation (usually during puberty), whereas secondary type of POISmanifests later in life.

Responds to WPDC, in 2019 Strashny suggested few changes to improve the use of this criteria.[7] Through an online survey of 127 men who reported symptoms of POIS, he recommended additional severity degrees to Criterion 1. Furthermore, according to him, Criterion 3 also requires improvement to "In at least one ejaculatory setting (sex, masturbation, or nocturnal emission), symptoms occur after all or almost all ejaculations."

Pathophysiology

Until recently, the mechanism underlying the symptoms of POIS is still unclear. There are several hypotheses regarding the causes of POIS as listed in Table 2.

Table 2. Several Hypotheses of POIS

Authors	Year	Number of Cases	Hypothesis
Waldinger et. al.[2]	2011	47	Immune modulated mechanism
Jiang et. al.[4]	2015	1	Opioid withdrawal
Ashby et. al.[7]	2010	2	Disordered cytokine or neuroendocrine response

The most widely adopted hypothesis is the immune modulated mechanism postulated by Waldinger et. al. This is supported by positive reaction results in 88% of patients after a skin-prick test (SPT) using the patient's own diluted semen (1:40,000).[2] They proposed that POIS is associated with immunological hyperreactivity to seminal fluid and involves a combination of Type-I and IV allergic reactions. Although using a quite large sample size, unfortunately, this study did not include healthy male controls, thus reducing the validity of the results.

Respond to Waldinger's postulation, Jiang et. al. stated that healthy male controls can show a positive SPT result with autologous semen.[4] This has been proven by three control subjects in his study. It is also possible that not all men with POIS have an allergic condition. In addition, Jiang et. al. proposed that the symptoms of POIS are similar to those of "opioid withdrawal syndrome", in which the condition is likely to be caused by abounding consumption of endogenous opioids during orgasm.

Another mechanism was proposed by Ashby dan Goldmeier.[8] In a case report of two POIS patients, they suggestsa role of cytokines in the bodies resulting neuroendocrine response after orgasm, including dopamine, noradrenaline, melanocortins, oxytocin, opioids, endocannabinoids, and serotonin. However, apart from only two patients that were included in the study, further investigation into the neurobiochemical substances is needed.

Management

POIS is a rare condition that may be misdiagnosed and underreported. So far there is no standard treatment modality for POIS. Patients with POIS-like symptoms are treated with antihistamines, selective serotonin reuptake inhibitors, and benzodiazepines.[9] Presumed pathophysiological mechanism of POIS, such as a male hypersensitivity reaction to his semen. This leads to treatment of POIS as well as the treatment of hypersensitivity.

Hyposensitization therapy was performed in two men from Netherlands with POIS diagnosis. Both reported improvement in complaints of 60% at month 31 in patient 1 and at month 15 in patient 2, but this report was not carried out in a placebo-controlled trial so that the evidence is not yet considered strong.[1]The treatment with the same concept has been reported by Kim et al. Kim et al performed intralymphatic immunotherapy with autologous semen in Korean men with POIS. This procedure is assisted by using an ultrasound guide and a size 25 needle, then the autologous semen is injected aseptically into the inguinal lymph nodes at a dilution of 1: 40,000. Then, the concentration was increased threefold, as in the previous study by Waldinger et al. After 15 months, all the symptoms associated with POIS were reported except for sore throat and complaints of urinary discomfort reduced and the duration of complaints were shorter.[10]

The treatment based on hypersensitivity reactions is also carried out using drugs such as antihistamines. However, this treatment has been reportedly ineffective. Likewise, the use of corticosteroids such as prednisone was also reported to have no good outcome.[11] Pierce et al gave an antihistamine in the form of cetirizine in the case of a 28 year-old man with POIS in New York, for four weeks of treatment reported symptoms of diarrhea and abdominal cramps which at that time was reported as one of the symptoms of POIS had improved but there was no improvement in other symptoms. Likewise, the use of diphenhydramine was reported to produce a better output.[12]

The variable symptoms of POIS are also treated by administering symptomatic drugs such as NSAIDs and benzodiazepines. Another successful trial with nonsteroidal anti-inflammatory (diclofenac) was successful in relieving symptoms (up to 80% improvement) and allowed the patient, in that case, to report increased sexual frequency from 2 to 4 times a month.[8] Jiang et al. also prescribed diclofenac 75 mg 1–2 h before to sexual activities with orgasm, to be continued twice daily for 24–48 h.[4] For headaches and muscle aches, celecoxib 200 mg, which is an NSAID, is given daily after ejaculation. Immediately after taking the drug, headaches and muscle aches are reduced, and the patient can ejaculate 3 days a week. However, general fatigue doesn't get better. Treatments with benzodiazepines and SSRIs (paroxetine and citalopram) improves mood but does not impact somatic symptoms.[1] Treatment with flutamide reduces libido and ejaculation frequency but has no impact on somatic or psychological symptoms.[1]

Other than that, the neurological mechanism, in this case, the role of the post-orgasmic autonomic nervous system, is also suspected to be one of the causes of POIS. Treatment with alpha-blockers is also thought to be a part of therapy. Terazosin use, followed by alfuzosin for several months reported to produce significant improvements, besides symptoms such as unpleasant feelings in the stomach that appear after ejaculation are also reduced by administering this drug. However, the use of this drug is reported to cause dizziness and erectile dysfunction.[12]

Another alpha-blocker also reported to be included in the management of POIS is silodosin. Reismann conducted a study by giving silodosin 8 mg to fourteen people who were willing to be treated with a diagnosis of POIS. Silodosin is given two hours before intercourse. Eight people reported to have improvement with silodosin administration and one patient complained of side effects that could not be tolerated. Reismann et al also

performed a combination of silodosin with ibuprofen 400 mg and prednisone 30 mg and reported improvement.[6]

The modality of hormone therapy was also reported to provide improvement. Bolanos et al gave an injection with 1500IU hCG that was injected subcutaneously three times a week. The patient experienced improvements in symptoms. He ejaculates more frequently and doesn't experience weakness, anxiety, brain fog, or malaise afterwards. He noted improvements in mood, overall energy, and libido. He still described mild POIS symptoms immediately after orgasm, but these symptoms resolves within 12 hours and were unobtrusive. The success with hCG treatment raises the possibility that testosterone deficiency may be the underlying cause in some cases, providing the possibility for new therapeutic approaches.[13] Teppei et al also administered hormonal therapy in the form of testosterone enanthate were given as TRT every 2 weeks in patients with POIS because the patient's free serum testosterone levels were lower than 70% of the mean value in young adult males. This treatment was continued for up to 4 weeks and then replaced with a testosterone ointment preparation (Glowmin®; Daito Pharma, Tokyo, Japan), and the symptoms continues to improve.[11]

A probiotic containing *Bacillus coagulans* and fructooligosaccharide, can be used to decrease the symptoms.[12] Many alternative therapies have been suggested to be effective in improving symptoms of POIS, including niacin, olive leaf, fenugreek, saw palmetto, and wobenzym.[14]

Until now there is no gold standard therapeutic modality for the treatment of POIS, and further research is needed to find standard therapy for patients with POIS.

CONCLUSION

POIS is a rare disease and is not well understood. Hypersensitivity reactions are still believed to be the cause of this syndrome And also, neuroendocrine involvement and suspected opioid withdrawal were reported as a possible causes of POIS. The signs and symptoms that are complained of are also various and not specific. More clearer criteria is needed to approach the diagnosis of POIS. POIS therapy is also not standardized and varies with one another. Treatments may include the use of antihistamines, NSAIDs, steroids, alpha-blockers, hormonal agents, and other adjuvant therapy. Further research is needed to determine the mechanism of this syndrome as well as more standard treatment. Besides that, the clinician's awareness is needed to recognize this disease so that it is not misdiagnosed.

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