

Post orgasmic illness syndrome (POIS)

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Abstract: Men with post orgasmic illness syndrome (POIS) become ill rather immediately after ejaculation, whether spontaneously at night, during sexual intercourse or masturbation. Two subtypes are distinguished: primary and secondary POIS. It also occurs before or after a man has been sterilized. POIS is an invalidating most probably auto-immune disease leading to much distress in males and their partners. It is characterized by five criteria. Its symptoms are described by seven clusters. However, the manifestation of these symptoms varies from one male to the other but is relatively constant in the person himself. Among men the symptoms vary in intensity, durations and sort of symptoms. POIS is a chronic disorder that manifests itself in POIS “attacks” that occur within a few minutes to a few hours after ejaculation, and disappear spontaneously after 3 to 7 days. POIS is not associated with increased total serum IgE concentrations. On the contrary, there are indications that POIS is triggered by specific cytokines that are released by an auto-immune reaction to the man’s seminal fluid. Indirect clinical evidence suggests that the antigen (Ag) triggering the POIS systemic reaction is not bound to spermatozoa but to seminal fluid produced by prostatic tissue. In addition, POIS may also occur—although rarely—in females. In those cases, it is hypothesized that the Ag is associated with female prostatic tissue around the vagina.

Keywords: Post orgasmic illness syndrome (POIS); ejaculation

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Introduction

In 2002, Waldinger and Schweitzer published a case report of two males who had similar but remarkable complaints that so far had not been described in medical literature (1). They became ill immediately after ejaculation. This occurred whether they ejaculated during intercourse, masturbation or spontaneously at night. The illness started with flu-like symptoms such as feeling feverish, a foggy head and/or painful heavy muscles of arms and legs followed by concentration and attention difficulties and irritation. These complaints lasted for about 5 to 7 days, after which they disappeared until the next time that they have had an ejaculation. This new cluster of symptoms clearly needed a name. The authors called it “post orgasmic illness syndrome” or abbreviated “POIS” (1). After this first publication of POIS, a gradually increasing number of males

around the world recognized its symptoms and reported to be relieved that finally there was an official medical name and that they did no longer had to believe to suffer from a psychiatric disorder or a mysterious somatic disease as has been told to them by various medical specialists.

Symptoms of POIS

Both men of the first publication of POIS reported a rapid onset of flu-like symptoms, such as feverishness, extreme fatigue, and burning eyes after ejaculation followed by more cognitive disturbances such as concentration difficulties and particularly an irritated mood (1). These symptoms disappeared after 3 to 7 days. However, all these complaints returned in the same severity after they ejaculated again. As a result, they refrained from sexual activity in order to avoid to becoming ill again. Notably, both men were

otherwise physically completely healthy. As the symptoms of POIS occurred rather immediately after ejaculation Waldinger and Schweitzer (1) postulated that POIS was caused by an immunological process, as only the immune system is capable of inducing very rapid and serious physical and mental symptoms. However, and importantly, the postulated immunological origin of their complaints gave rise to a systemic reaction of the body and not a local genital reaction. Support for an immunological cause of these flulike complaints was found in reports on cytokines inducing a flulike state (2,3). But at the time, the role of cytokines in mediating POIS was unknown.

Five preliminary criteria

In further research of 12 other Dutch patients with similar complaints, Waldinger *et al.* (4) classified POIS into five preliminary criteria. A consecutive group of 45 males with these complaints fulfilled to most of these five preliminary criteria (4). Consequently, it was argued that the presentation of POIS is variable but quite well represented by these five criteria. The five criteria of POIS are as follows:

- (I) Criterium 1. One or more of the following symptoms: sensation of a flu-like state, extreme fatigue or exhaustion, weakness of musculature, experiences of feverishness or perspiration, mood disturbances and/or irritability, memory difficulties, concentration problems, incoherent speech, congestion of nose or watery nose, itching eyes;
- (II) Criterium 2. All symptoms occur immediately (e.g., seconds), soon (e.g., minutes), or within a few hours after ejaculation that is initiated by coitus, and/or masturbation, and/or spontaneously (e.g., during sleep);
- (III) Criterium 3. Symptoms occur always or nearly always, e.g., in more than 90% of ejaculation events;
- (IV) Criterium 4. Most of these symptoms last for about 2 to 7 days;
- (V) Criterium 5. The symptoms disappear spontaneously.

Primary POIS and secondary POIS

Based on the study of 45 males who fulfilled to the aforementioned five criteria, it appeared that there are two types of POIS (4,5): a primary type in which POIS becomes manifest from the first ejaculations in puberty or

adolescence. And a secondary type in which POIS starts later in life. Of the 45 males, 49% had the primary type, whereas 51% had the secondary type. In 87% of the men, POIS started within 30 min after ejaculation. It lasted for 4.6 ± 2.8 days (4). Of the 73% males with a partner, the intercourse frequency was 1.04 ± 1.00 per week and three males had decided to abstain from intercourse (4). Eight males reported an intercourse frequency of once in 2 to 6 months. Of the males older than 30 years without a partner, six men had decided to refrain from masturbation or intercourse as much as possible (4). These data illustrate the mental burden POIS induces to the affected male and to his relationship. A substantial number of the young men with primary POIS are reluctant to look for a female partner as they can't imagine that a woman will accept a man who prefers to abstain from sex. These men need to cope with their own catastrophic idea that they will stay alone for the rest of their life. But not only that. These men also have to cope with reducing ejaculation frequency as much as possible even when the urge to have sex and intimacy is normal or even strong. They have to reduce it, as the consequence of an ejaculation will be a disturbance of their concentration and alertness on their work or during their studies for about a week. An intriguing phenomenon of POIS is that during a POIS "attack", a latent illness and/or a previous scar of a trauma or surgery will become painful or sensitive again. As soon as POIS has disappeared the illness or scar sensitivity disappears as well. Probably this is also due to immunological processes that are activated during a period of active POIS. Interestingly, in this cohort of POIS patients 56% of them reported lifelong premature ejaculation with an intravaginal ejaculation latency time (IELT) of less than 1 minute (4).

Seven clusters of criterium 1

Waldinger *et al.* (4) showed that the symptoms (e.g., criterium 1 of the 5 point preliminary classification) vary substantially and can be categorized according to seven clusters of symptoms, as expressed in the own words of the patient.

- (I) Cluster 1 (general cluster): extreme fatigue, exhausted, palpitations, problems finding words, incoherent speech, dysarthria, concentration difficulties, quickly irritated, can not stand noise, photophobia, depressed mood;
- (II) Cluster 2 (flu-like cluster): feverish, extreme warmth, perspiration, shivery, ill with flu, feeling

- sick, feeling cold;
- (III) Cluster 3 (head cluster): headache, foggy feeling in the head, heavy feeling in the head;
 - (IV) Cluster 4 (eyes cluster): burning, red injected eyes, blurred vision, watery, irritating, itching eyes, painful eyes;
 - (V) Cluster 5 (nose cluster): congestion nose, watery, runny nose, sneezing;
 - (VI) Cluster 6 (throat cluster): dirty taste in mouth, dry mouth, sore throat, tickling cough, hoarse voice;
 - (VII) Cluster 7 (muscle cluster): muscle tension in back or neck, muscle weakness, pain muscles, heavy legs, stiffness muscles.

Skin prick test with autologous semen

In order to investigate their immunological hypothesis that POIS is caused by an immunological reaction of the male against his own semen, Waldinger *et al.* (5) performed a skin prick test with extremely diluted semen of the patient himself. In order to objectify the skin reaction after inoculation of the semen a protocolized intracutaneous (IC) skin-prick test was performed with the male's own semen (autologous semen) and compared with a placebo skin reaction with IC saline 0.9% (5). The patient masturbated at home to produce semen. In hospital the harvested semen sample was defrosted and diluted with saline 0.9% to a concentration of 1:40,000. In addition, 0.05 mL of each dilution was IC injected at the volar side of the left forearm. The skin reaction to autologous semen and placebo were interpreted at 15 minutes after IC injections and found to be positive when the diameter of the wheal was >5 mm with local erythema (5). The grading system of the skin reactions was as follows: (I) wheal and erythema <5 mm = negative; (II) wheal 5–10 mm and erythema of 11–20 mm =1+; (III) wheal erythema of 21–30 mm =2+; (IV) erythema of 31–40 mm =3+; and (V) wheal >15 mm or erythema of >40 mm =4+ (4,5).

Notably, the potential risk of a skin prick test with autologous semen is a provocation of the POIS symptoms and even a generalized anaphylactic shock that necessitates an intensive care hospitalisation (5). In order to avoid this to happen, one has to really minimize the semen to extremely low concentrations. This is denoted by a dilution of 1:40,000.

Of 33 men who consented with skin-prick testing, 29 (88%) had a positive skin prick test with their own

semen (4,5). None of the males showed a skin reaction on the placebo skin prick. The positive skin prick test on autologous semen was the first indication in support of the immunological hypothesis of POIS. A limitation of the study was that the skin-prick test with autologous semen was not performed in an age-matched control group of men with no complaints of POIS (4,5). This ought to be investigated before one can conclude that a positive skin prick test with autologous semen is a specific POIS characteristic.

POIS and atopic constitution

Although a lack of a local genital reaction excludes an allergy to autologous semen as cause of POIS, Waldinger *et al.* (4) investigated whether these men also suffer from an allergic constitution. In their cohort 58% of the men reported to be known with various forms of allergies (4). The majority of them suffered from hay fever (22%), allergy for animals (20%), allergy for house-dust mite (18%) and various other forms of allergies. However, the mean serum total IgE in the non-atopic males was 27 kU/L (range, 6–78 kU/L), indicating that in these men this immunological marker was normal (4). In other words, POIS is not associated with disturbances that lead to an increased IgE reaction. Also routine and hormonal assessments in POIS patients are normal (4). Importantly, the study of Waldinger *et al.* (4) showed that POIS also occurs in males who are not known with any form of allergy.

A non-specific clinical test

A non-specific clinical test of POIS that may be helpful for the patient to diagnose POIS is to advise him to stop masturbating or intercourse just before the first genital sensations of an impending ejaculation occur while having a full erection (4). This is not easy to perform as one asks the patient to stop his sexual activity while having an increasing pleasure in this activity. In most cases of POIS the patient will notice that his POIS symptoms will not become manifest after this non-specific clinical diagnostic test.

Hyposensitization treatment of POIS with autologous semen

In spite of the fact that there was no hard evidence of an allergy to autologous semen, but due to the necessity to

find a possible treatment, Waldinger *et al.* (5) investigated whether a hyposensibilisation treatment with autologous semen would reduce the symptoms of POIS. The strategy of hyposensitization treatment has been formulated in 1911, by Leonard Noon (6). He described an at the time novel treatment (e.g., hyposensitization) for hay fever. This treatment consisted of injecting increasing doses of an extract of pollen subcutaneously until the hypersensitivity reaction was diminished or abolished (6). Over subsequent decades, hyposensitization established itself as the cornerstone of clinical allergy (7).

The protocol of hyposensitization for treating POIS was developed by Marcus Meinardi (4,5). He intensified the hyposensitization with extremely diluted autologous semen by gradually higher concentrations of autologous semen. Titrations were performed according to local skin reactions post inoculation, aiming at a wheal and flare response of 3+. This score was intentionally maintained for a period of at least 2 years. In clinical practice however, it appeared that this strategy has to become adjusted to the local skin reactions of the moment of treatment. Concentrations of semen were periodically increased at a score of 2+ or less (5). Oppositely, in case the score exceeded 3+, semen concentrations were lowered (5). In other words, when the semen dilution is a little bit too concentrated, these men get their usual complaints after the skin prick, but when the dilution is in the right concentration, these men hardly notice it. In case of systemic reactions, semen concentrations need to be tapered drastically for a few weeks. Each session has to be planned every 2 weeks for the first year and followed by once a month in the following years (5).

The hyposensitisation treatment is time consuming and expensive and therefore difficult to perform in daily clinical practice. This is even more difficult to perform as POIS still is a medically non-recognized illness, unknown to allergists and most medical specialists. Moreover, insurance companies will not be inclined to reimburse treatment for POIS as long as this is an officially non-recognized illness. Hopefully, further research on POIS will contribute to its official recognition and financial support for its research.

The lack of a local genital skin reaction after ejaculation, but the occurrence of multiple complaints after ejaculation, and the findings of the hyposensitization treatment suggest that in POIS immunologic reactions occur due to repeated close contact during ejaculation between seminal peptides and circulating T-lymphocytes (4). This leads to a systemic reaction with multiple physical and cognitive complaints.

Semen and/or seminal fluid

In the search for the cause of POIS the question is which part of the ejaculate contains the antigen (Ag) that triggers the immunological reaction. In 2015 Waldinger reported the occurrence of POIS before and after sterilisation in three men. This phenomenon means that the AG is most likely not bound to the spermatozoa but associated with the seminal fluid. Indeed, after sterilization, spermatozoa are not anymore released into the genital system, but seminal fluid continues to be produced, for example by the prostate and/or the seminal vesicles.

POIS in females

Waldinger recently also reported on the first woman complaining of POIS symptoms. According to Waldinger the Ag triggering a POIS attack may be produced by prostatic tissue in the male but also in prostatic tissue that in females is localized around the upper wall of the vagina.

POIS is an auto-immune disorder

Based on the aforementioned phenomenons, Waldinger postulates that POIS is presumably an auto-immune disease caused by an auto-immune reaction to a substance in the man's seminal plasma. To find the Ag in the seminal plasma that causes the auto-immune reaction is of utmost importance for a better understanding of and finding an effective treatment of POIS. The physical and cognitive symptoms of POIS are produced by some specific cytokines that are released by the immunological reaction occurring during ejaculation.

Summary

POIS is an invalidating most probably auto-immune disease leading to much distress and sorrow in males and their partners. It is characterized by five criteria. In addition, the symptoms of POIS can be described by seven clusters. However, the manifestation of these symptoms varies from one male to the other but is relatively constant in the person himself. Among men the symptoms vary in intensity, durations and sort of symptoms. For example, some men complain of mainly extreme fatigue and itching eyes whereas others may complain of mainly concentration difficulties and mood irritation. POIS is a chronic disorder

that manifests itself in POIS “attacks” that occur within a few minutes to a few hours after ejaculation, and disappear spontaneously after 3 to 7 days. POIS is not associated with increased total serum IgE concentrations. On the contrary, there are indications that POIS is triggered by specific cytokines that are released by an auto-immune reaction to the man’s seminal fluid. Indirect clinical evidence suggests that the Ag triggering the POIS systemic reaction is not bound to spermatozoa but to seminal fluid produced by prostatic tissue. In addition, POIS may also occur in females. In those cases, it is hypothesized that the Ag is associated with female prostatic tissue around the vagina.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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