Omega-3 Fatty Acid Supplementation in Treatment of Post-Orgasmic Illness Syndrome: A Report of Two Cases

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Introduction and Background:

Post-orgasmic illness syndrome, or POIS, is an underreported disorder that tends to impact both the patients' and their partners' lives and is characterized by the development of post-ejaculatory flu-like symptoms including fever, fatigue, and difficulty concentrating that spontaneously resolve within days or weeks.1 Although the exact pathophysiology of the disease remains unclear, previous work in this field provided a multitude of explanatory hypotheses, of which the allergic-immunologic theory is the most studied.1–3 Multiple treatment modalities have been reported including hyposensitization therapies, prednisone, nonsteroidal anti-inflammatory drugs (NSAIDs), antihistamines, benzodiazepines, and selective serotonin reuptake inhibitors (SSRIs); none of these modalities have enough supporting evidence.4 Omega-3 polyunsaturated fatty acids have been shown to reduce pro-inflammatory cytokines, chemokines, prostaglandins, and leukotrienes. They additionally increase the anti-inflammatory, anti-thrombotic prostaglandins by decreasing the availability of the proinflammatory omega-6 fatty acids in cell membranes.5 In this article, we report two cases presumed to have POIS who were successfully managed with omega-3 fatty acid supplementation, which - to the best of our knowledge - has not been previously reported in scientific literature.

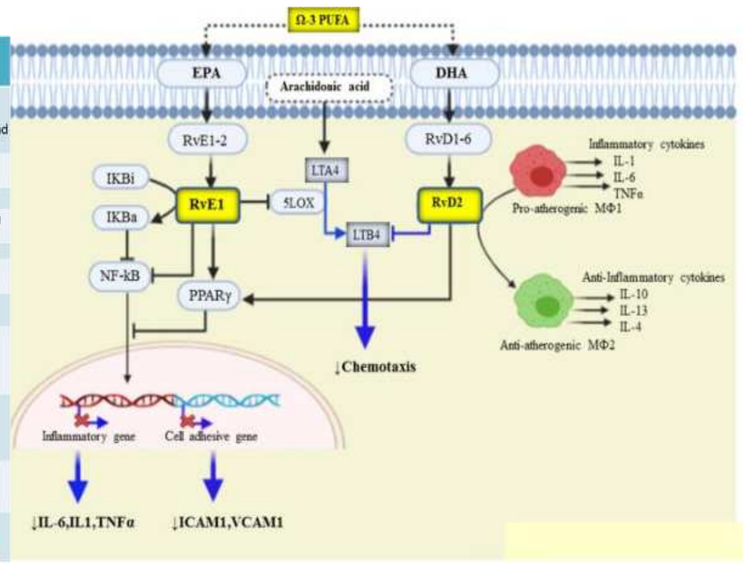
Cases

Case 1:A 23-year-old man experienced severe fatigue, weakness, mood changes, and other symptoms after ejaculation since he was 18. These symptoms lasted for days, impacting his daily life and prompting him to reduce masturbation frequency. Medical tests showed normal results, and previous treatments were ineffective. After starting omega-3 fatty acid supplements, his symptoms gradually disappeared within two weeks and nearly vanished after a month.

Case 2:An 18-year-old man suffered flu-like symptoms, fever, fatigue, and headaches after ejaculation since he was 15, affecting his school attendance. Despite various treatments and normal test results, his symptoms persisted. Following a trial inspired by the success of omega-3 fatty acid supplements in Case 1, the patient experienced partial relief after three weeks and significant improvement after six weeks on a higher dosage. Symptoms recurred upon discontinuation of the supplements but resolved upon restarting them.

Discussion

Criterion Number	Description	Cluster	Symptoms
1	At least 1 of the symptoms which are classified according to 7 clusters of symptoms	General	Extreme Fatigue/Exhausted, Palpitations, Problems finding words/Incoherent speech, Dysarthria, Concentration difficulties, Quickly Irritated, Cannot stand noise, Photophobia, Depressed mood
		Flu-Like	Feverish, Extreme warmth, Perspiration, Shivery/Chills, Ill with flu, Feeling sick, Feeling cold.
		Head	Headache, Foggy feeling in the head, Heavy feeling in the head.
		Eyes	Burning, Red-Injected eyes, Blurred vision, Watery, Irritating, Itching eyes, Painful eyes.
		Nose	Congested nose, Watery-Runny nose, Sneezing
		Throat	Dirty taste in the mouth, Dry mouth, Sore throat, Tickling cough, Hoarse voice.
		Muscle	Muscle tension in the back or neck, Muscle weakness, Painful muscles, Heavy legs, Stiffness in muscles.
2	Symptoms occur up to 6 hours or less of orgasm from **sexual intercourse, masturbation, and/or nocturnal emission.**		
3	Symptoms occur in **over 90% of all ejaculations** (sex, masturbation, or nocturnal emission) or at least in one ejaculatory setting		
4	Symptoms last for 2-7 days		
5	Symptoms disappear spontaneously and last no longer than 21 days		



Our study diagnosed POIS in two patients based on Waldinger's diagnostic criteria. Treatment remains challenging due to limited trials and unclear pathophysiology, with our cases responding to omega-3 fatty acids after failing multiple therapies.**The allergic-immunologic theory** suggests POIS involves hypersensitivity reactions to a semen antigen. **The neuroendocrine hypothesis** proposes dysregulated sympathetic responses during orgasm, leading to inflammatory processes and neuropsychiatric symptoms. During orgasm and ejaculation, there is a release of norepinephrine, which activates the alpha-1a receptor, inducing the release of arachidonic acid (ARA), and subsequently the release of pro-inflammatory prostaglandins and leukotrienes. **The opioid-like withdrawal hypothesis** links POIS symptoms to excessive endogenous opioid consumption during ejaculation.Various treatments have been attempted, including antihistamines, NSAIDs, and hyposensitization therapy, with inconsistent success. Targeting the ARA pathway has shown efficacy, as ARA metabolites contribute to inflammation implicated in POIS. Omega-3 fatty acids have been shown to exert their effects by interfering with ARA metabolism. Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are omega-3 fatty acids which have been shown to impair the immune response and decrease leukocyte migration to sites of inflammation. Their effect on the immune system is thought to result from their incorporation into the cell membrane of leukocytes which occurs at the expense of ARA, decreasing its availability, and, accordingly, its proinflammatory metabolites. Moreover, EPA and DHA can be processed by the same chemical pathway that converts ARA into pro-inflammatory cytokines, producing anti-inflammatory cytokines that promote the resolution of the inflammatory response. Furthermore, omega-3 fatty acids have been reported to have potential benefit in autoimmune disorders such as inflammatory bowel disease, autoimmune hepatitis, rheumatoid arthritis, and type 1 diabetes as well as allergies such as asthma, and thus their favorable role in our POIS patients further reinforces an allergic-immunologic etiology. The effects of omega-3 fatty acids in inhibiting the immune response are more holistic in comparison to the effects of NSAIDs . Moreover, how omega-3 fatty acids could relate to the opioid withdrawal-like hypothesis or other theories proposing immune system priming through an incomplete blood-testis barrier is less apparent. Omega-3 fatty acids may reduce opioid-seeking behavior. They have also been shown to alleviate hydrogen sulfide-induced blood-testis barrier disruption in the testes of adult mice. Whether these mechanisms are relevant or not is hard to assess.

Conclusions

Overall, our study points towards the role of the ARA pathway in the pathogenesis of POIS, supporting both the autoimmunity and the neuroendocrine hypotheses. We hypothesize that omega-3 fatty acids may alleviate POIS symptoms by targeting this pathway and is an aspect worthy of exploration for the POIS community.

Literature cited

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Further information

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