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Case Reports

Amelioration of severe generalized idiopathic pruritus in an estrogen deficient woman taking an aromatase inhibitor for breast cancer following treatment with amphetamine salts

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Summary

Purpose: To determine if treating with dextroamphetamine sulfate can relieve severe generalized idiopathic pruritus in an estrogen deficient woman taking an aromatase inhibitor for breast cancer. *Materials and Methods:* Dextroamphetamine sulfate 15 mg extended release capsules (as part of amphetamine salts) was prescribed. *Results:* Within one week the pruritus was completely dissipated and remained under total control for two months. She stopped the medication and the severe pruritus returned in three days. Resuming the amphetamine, the symptoms disappeared again and she has remained completely without symptoms for ten additional months while on medicine. *Conclusions:* It is not clear if the estrogen deficiency caused the pruritus by producing dry skin. Nevertheless, if a woman with estrogen deficiency complains of pruritus, but estrogen therapy is contraindicated, the treating physician could consider treating with dextroamphetamine sulfate. Of course this could be attempted in women with normal estrogen who have idiopathic pruritus in the absence of any noticeable skin lesions if other remediable causes, e.g., scabies, has been excluded.

Key words: Estrogen deficiency; Aromatase inhibitor; Dextroamphetamine sulfate; Breast cancer.

Introduction

Endocrinological causes of generalized pruritus without obvious skin lesions includes hypothyroidism and estrogen deficiency. The mechanism is probably related to dry skin. However, what can the consulting physician do if the dermatologist can find no cause of very severe pruritus without skin lesion, e.g., scabies, the thyroid levels are normal, and though estrogen deficient, a pre-existing condition, e.g., breast cancer, precludes a trial of estrogen?

Case Report

A 45-year-old woman had a bilateral mastectomy and bilateral oophorectomy for breast cancer associated with the BRCA-2 mutation. She was treated with an aromatase inhibitor for 2.5 years. At age 48 she sought another opinion for a very severe acute development of generalized pruritus that had been present for the past month. The pruritus was so intense that in this short time she had consulted with two dermatologists, one allergist, a specialist in internal medicine, and her oncologist. Hypothyroidism was excluded by blood studies, scabies was excluded by both of her dermatologists. The oncologist and the allergist though that a drug reaction to the aromatase inhibitor after 2.5 years was unlikely, they were willing to switch to another aromatase inhibitor. However, both the patient and the oncologist were reluctant to stop since up to one month ago she had no side effects. Furthermore, both the oncologist and the patient wanted to continue the prophylaxis of suppressing recurrence or spreading of this estrogen receptor positive cancer, and thus not stop the drug. The internal medicine specialist considered the possibility of parasitic infection, e.g., blastocystis hominis.

The patient ran a computer search and found that decreased skin elasticity related to estrogen deficiency leading to dryness can sometimes cause generalized pruritus. She sought the opinion of a reproductive endocrinologist figuring they may have knowledge of how to help pruritus from estrogen deficiency without replacing estrogen.

The patient was advised that there was no way to determine if the etiology was estrogen deficiency or not. However, the sudden severe nature of the pruritus made it seem unlikely that estrogen deficiency was the etiologic factor.

Based on experience in treating other cause of pruritus that did not respond to antihistamines and glucocorticoid (this patient also failed to gain relief with that treatment), but where skin lesions are usually found, the authors offered to treat her with the sympathomimetic amine dextroamphetamine sulfate [1-3].

She did have testing performed at this same time by her internal medicine specialist for blastocystis hominis. The pruritus completely disappeared within the first week of treating with 15 mg

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dextroamphetamine sulfate (in the form of amphetamine salts) extended release capsule. The improvement persisted for two months. Her internal medicine specialist called her and said her testing for blastocystis hominis was positive. They re-consulted. Based on the authors' statement that once symptoms of the increased cellular permeability syndrome occur, permanent remission is rare, and that she may need to take the amphetamine for life, she decided to see if the treatment for the blastocystis parasite may be the cause the problem and see if treatment would eradicate the pruritus. Perhaps the dextroamphetamine was able to help a pruritus caused by the parasite. She was treated for the blastocystis hominis by her internist.

She stopped the dextroamphetamine sulfate and the symptoms returned within three days. It dissipated with 24 hours after resuming the amphetamine. She continues the amphetamine and has had no pruritus after an additional ten months.

Discussion

Women as they age and are estrogen deficient frequently do complain of dry skin and generalized pruritus (but generally not as severe as this patient). Based on this case, however, it may be worth trying this sympathomimetic amine therapy in women with estrogen deficiency and pruritus who are not achieving adequate relief from moisturizers or antihistamines and who do not want to take estrogen supplementation (or despite estrogen still have pruritus).

This patient's cancer appears to be in complete remission, so it does not seem likely that the pruritus is related to some unknown chemicals secreted by the cancer cells. Also her liver function studies have been completely normal. The pneumocystis parasitic infection as a cause of the generalized pruritus was only a long-shot in that it has only occasionally been associated with peri-anal pruritus.

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