

Drug points

Alopecia and breast disease

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A 26 year old woman with refractory cyclical mastalgia was started on a regimen of 10 mg tamoxifen daily. She was otherwise well and not taking any other drugs. After three months she developed alopecia on her crown. Tamoxifen was stopped and her hair began to grow back. Because of continuing symptoms, she was given goserelin 3.6 mg monthly. After two injections the mastalgia resolved, but a new area of alopecia developed. Three months after discontinuing goserelin there were signs of regrowth.

A 62 year old woman with breast cancer was treated with adjuvant tamoxifen 20 mg daily. She had been taking bezafibrate for five years to treat hyperlipidaemia, and temazepam for three years. After three months she developed hair thinning over her temples and areas of alopecia (fig 1). Tamoxifen was stopped, but there was no regrowth.

Tamoxifen is widely used to treat breast cancer and is under investigation as a chemopreventive agent. Tamoxifen and goserelin are highly effective in refractory mastalgia.^{1,2} Tamoxifen competes for the oestrogen receptor,¹ and goserelin causes a fall in oestradiol to post-menopausal concentrations, with a lesser fall in androgens.³ Male pattern baldness is genetically determined, induced by androgens, and occurs in 15% of post-menopausal women.⁴ In areas of male pattern baldness oestrogens initiate hair growth and androgens cause the transformation of terminal to vellus hairs. Withdrawal of oestrogenic stimuli causes the hair follicle to shift into a resting phase. Tamoxifen and goserelin produce an environment of hypo-oestrogenism with relative hyperandrogenism, which leads to hair loss in susceptible women. In older women the follicle may not recover.



Fig 1 Male pattern hair thinning, which developed three months after starting tamoxifen 20 mg daily

Alopecia is reported on the data and patient information sheets for proprietary tamoxifen (Nolvadex, Zeneca). However, neither the generic forms of tamoxifen nor proprietary goserelin (Zoladex, Zeneca) report alopecia in the datasheets. With widening indications for tamoxifen and goserelin in young women, the distressing adverse event of hair loss should be highlighted before treatment is started.

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Lethargy with omeprazole

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We report a case of serious mental changes after omeprazole use in an otherwise healthy man. Rechallenge with the drug produced the same symptoms.

A 64 year old former security officer presented with symptoms of reflux disease. After endoscopy he was treated with omeprazole 40 mg daily for Barrett's oesophagitis. He was in excellent physical and mental health and was taking no other drugs. He was a non-smoker and drank alcohol only occasionally; he had been prescribed ranitidine intermittently. Two months after starting omeprazole he had bouts of dizziness and headaches, followed by diarrhoea.

Mebeverine 200 mg twice daily offered transient relief only. The symptoms recurred and he became impotent. He also felt listless and tired. His relatives described him as drowsy. Omeprazole was withdrawn. He recovered completely within two days, regaining full awareness. A presumptive diagnosis of omeprazole associated side effects was given. A viral infection could not be excluded, although he did not have a fever.

After discussion of the findings with the patient we decided to rechallenge him with the drug. On the first day after the regimen of omeprazole 40 mg daily had been restarted he experienced dizziness and headaches again. After 13 days of progressive drowsiness he became lethargic with periods of absent mindedness and incoherent

speech. The drug was stopped once more, which resulted in a quick recovery, similar to what had happened when the drug had been withdrawn before.

Omeprazole is a powerful manipulator of gastric acid secretion. The drug exerts its effects by selective inhibition of hydrogen-potassium ATPase in parietal cells.¹ Reported side effects are predominantly gastrointestinal and include nausea, vomiting, diarrhoea, constipation, dry mouth, and headache.^{2,3} Reversible side effects affecting the central nervous system, such as reduced consciousness, confusion, agitation, and hallucinations, have been observed incidentally.^{2,4} These were seen in critically ill inpatients receiving omeprazole intravenously, in those of advanced age, and in those who were dependent on alcohol.⁴ Our patient was taking no drugs other than omeprazole, which suggests a causal relation between omeprazole use and serious mental changes. Although immunological effects attributed to omeprazole have been reported, the exact mechanism needs to be clarified.⁵

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