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Lanreotide and loss of scalp hair

Introduction

Lanreotide (Somatuline ®) and octreotide (Sandostatine®) are somatostatin analogues. Lanreotide is licensed at the Dutch Market since July 1999 for the *treatment of acromegaly in order to normalise the growth hormone secretion after surgery and/or radiation therapy.* Lanreotide is also approved for the *treatment of clinical symptoms of carcinoids after administration of a test-injection*. The SPC mentions *local reactions at the injection site, such as pain and redness* and *gastrointestinal complaints, such as soft stools, diarrhea, abdominal pain, flatulence, anorexia, nausea and vomiting* as possible adverse drug reactions. *Furthermore, asymptomatic and symptomatic cholelithiasis* can appear during treatment with lanreotide [1].

Acromegaly is caused by an excessive production of growth hormone (GH), often due to a pituitary tumor. Although human somatic growth is regulated primarily by growth hormone, most of the growth-promoting effects of the hormone are mediated by insulin-like growth factor-I (IGF-I), which is largely synthesized in the liver, but is also produced in the kidney, muscle, pituitary, chondrocytes and the gastrointestinal tract. Through a negative feedback mechanism, IGF-I suppresses growth hormone-mRNA synthesis in the pituitary [2].
Treatment of acromegaly includes transsphenoidal surgery, radiotherapy or pharmalogical treatment with dopamine agonists and somatostatin analogues [3]. The main goals for treatment of acromegaly are normalisation of hormone levels (GH and IGF-I), relief of signs and symptoms of acromegaly and shrinkage of pituitary tumor [4].
Temporary hair loss is labeled in the SPC of octreotide, but not in the SPC of lanreotide [5].

Reports

Recently the Netherlands Pharmacovigilance Centre Lareb received the first report of loss of scalp hair during the use of lanreotide. A 42-year-old male was using long-acting lanreotide (90 mg subcutaneous every four weeks) indicated for acromegaly. No concomitant medication has been reported. Five months after the first injection the patient experienced loss of scalp hair. Follow up information revealed that lanreotide has been discontinued and loss of scalp hair stopped since then.

The time to onset of drug-induced hair loss is in general two to four months, except for colchicine and antineoplastic drugs which have a much shorter time to onset. The time to onset of five months supports a causal link between the experienced hair loss and the use of lanreotide.

Other sources of information

Literature

A search in Medline revealed several case reports concerning loss of scalp hair associated with the use of the somatostatin analogues, such as octreotide and lanreotide [2-4,6,7]. Transient hair loss appears in 3-6% of the patients who use somatostatin analogues [4].
Nakauchi *et al.* describe a case report of a 71-year-old woman with acromegaly who was successfully treated with octreotide, achieving a reduction in pituitary adenoma size. Five months after starting with octreotide she experienced hair loss, while before starting with octreotide no hair loss was seen. Octreotide has been discontinued and patient started with the use of bromocriptine therapy. Hair growth resumed six months later. Since bromocriptine did not effectively decrease the GH level patient underwent transsphenoidal surgery [6].
Jönsson and Manhem treated nine patients with acromegaly (7 women, 2 men) with octreotide for 2 to 21 months. Four women (41 to 64 years) spontaneously reported diffuse scalp hair loss 3 to 9 months after starting with octreotide (100 µg, 2 to 3 times daily). Extreme thinning of the hair was diagnosed by clinical observation. Their remaining body hair was unchanged. All patients had pituitary insufficiency and required hormone substitution (thyroxin 0.1 mg and cortisone 37.5 mg daily). Scalp hair returned in 3 patients after discontinuation of octreotide. Four months later

there was a complete recovery of scalp hair. The fourth patient still showed diffuse scalp hair loss [7].

Suliman *et al.* report the efficacy and tolerability of the longer-acting depot formulation of SR-lanreotide in 30 patients (17 men and 13 women) with active acromegaly who were followed-up for a mean period of 60 weeks. Four female patients developed temporal hair loss, but in three patients the hair loss was not a reason to discontinue treatment. In the fourth patient discontinuation of lanreotide was necessary because the hair loss was more severe. After discontinuation of lanreotide the progression of the hair loss stopped. The length of treatment with lanreotide did not influence the occurrence or the severity of the temporal hair loss [3].

Databases

On January 5, 2004 the above mentioned report was the only report on lanreotide the Lareb database. The database contained seven reports on octreotide. None of these reports concerned loss of hair.

On January 5, 2004 the database of the WHO Monitoring Centre contains one report of alopecia associated with the use of lanreotide. This report concerned a 72-year-old woman who used monthly 80 mg lanreotide subcutaneously indicated for acromegaly and gigantism. Four months after starting she developed alopecia. Lanreotide has been withdrawn and the reaction abated. Furthermore, the database contained 12 reports of alopecia or hair loss associated with the use of octreotide. This association was disproportionately present in the WHO database (reporting odds ratio 2.3; 95% CI 1.3-4.0)

Mechanism

The mechanism of scalp hair loss during treatment with somatostatin analogues is not known. Acromegaly is usualy associated with hypertrichosis caused by an increase in IGF-1. During treatment with octreotide serum GH, plasma IGF-1 and 24hr urinary GH decrease. Acute and complete suppression of GH and IGF-1 might be a possible cause of the hair loss. Another possible cause of the temporal hair loss is the direct action of octreotide and lanreotide on the hair follicle cels [1,3,5,6].

Conclusion

Loss of scalp hair is a known, but not very well recognised adverse drug reaction of the somatostatin-analogue octreotide.

The report received by the Netherlands Pharmacovigilance Centre Lareb and the reported case reports in literature suggest that also during the use of lanreotide hair loss may occur.

References
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