

## Read Item - Drug-Induced Hair Loss

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**Abstract:** Doctors resource on Drug-Induced Hair Loss

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### Key Points

Drug induced alopecia is suggested by a diffuse hair loss developing in the absence of an alternative explanation while the patient is receiving a medication, and regrowth occurring on cessation of that medication. Reappearance of the alopecia on rechallenge helps to establish the drug, rather than the illness for which it was prescribed, as the cause of the hair loss. Certain drugs are well-known to produce this side-effect.

### Definition

Drugs can induce alopecia through loss of either anagen or telogen hairs. Anagen hair loss is usually dramatic, with the patient rapidly developing total alopecia and is discussed in the section on Anagen Effluvium.

### Epidemiology

Hair loss affects everyone who receives high dose chemotherapy. It is very common with etretinate and acitretin and is dose related. It is much less common with isotretinoin. Hair loss is frequently seen following either the cessation or commencement of oral contraceptive pills, and is more common with high dose preparations and those that have a high progestogen to oestrogen ratio. The incidence of hair loss associated with a host of other implicated drugs is unknown.

### Aetiology

The long list of drugs reported to have caused hair loss is shown in table below. Many of these reports are not conclusive in that other causes have not been adequately ruled out.

### Pathogenesis

Some medications act by exacerbating androgenetic alopecia, while others produce a telogen effluvium. Most drugs that produce an anagen effluvium in high doses can also produce a telogen effluvium in low dose. Anti thyroid drugs (including amiodarone) and anti lipid medications act by producing a deficiency state.

Minoxidil has been reported to produce increased telogen shedding, however this is due to dormant follicles re-entering anagen and pushing out the old club hair and is not a true alopecia.

The mechanism of hair loss with retinoids is complex. There appears to be a reduction in the duration of anagen as well as a telogen anchorage defect. There is no evidence of an anagen effluvium.

### Clinical features

Drug induced telogen alopecia usually presents with diffuse hair loss leading to thinning which may be profound. The alopecia tends to begin about 6 to 12 weeks after starting treatment and is progressive while the drug is continued.

### Diagnosis

The diagnosis is based on demonstrating the correct chronology of relevant drug use and hair loss and the exclusion of other causes. Chronic telogen effluvium may be

**Investigation**

Patients should be investigated to exclude other causes of a diffuse telogen hair loss which could be exacerbating factors such as iron deficiency anaemia, hypothyroidism and androgenetic alopecia.

**Pathology**

The pathology reflects the nature of the trigger (see table).

**Associated Features**

Other features of the drug eruption may be present. Retinoids also have other unrelated effects on hair, namely inducing straight hair to curl. The mechanism of this is unknown, but could relate to intrafollicular keratinisation. It usually reverts to normal spontaneously 6 or so months after the treatment is stopped.

**Prognosis**

With the exception of drug induced androgenetic alopecia, and cicatricial alopecias caused by drugs, regrowth of hair occurs after the medication is stopped if the drug is truly the cause of the alopecia. Occasionally patients have persisting thinning of their hair and a few notice continued shedding. This is most common after retinoid induced hair loss and the mechanism is not well understood.

**Treatment**

Cessation of the drug is advised.

**Table - Drug Induced Alopecia**

Telogen Effluvium Heparin

Warfarin

Propranolol/Metoprolol

Captopril/Enalapril

Allopurinol

Boric acid

Phenytoin

Glibenclamide

Amphetamines

Levodopa

Bromocryptine

Methysergide

Interferon

Albendazole/Mebendazole

Cimetidine

Colchicine (low dose)

Sulphasalazine

Penicillamine

Gold

Antithyroid action Carbimazole

Propylthiouracil

Amiodorone

Lithium

Prothyroid action Thyroxine

Hypolipidaemic agents Clofibrate

Triparanol

Pro-androgen action Oral contraceptive pill

Danazol

Testosterone

## Anabolic Steroids

Lichenoid cicatricial alopecia Chloroquine  
Mepacrine  
Proguanil

Anagen Effluvium\* Radiation  
Cyclophosphamide  
Doxorubicin  
Colchicine (high dose)  
Thallium/Mercury/Arsenic  
Cantharadin  
Azathioprine  
Methotrexate

\*Almost all chemotherapeutic agents can provoke an anagen effluvium.

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