

Heptaminol-Induced Hair Depigmentation in a Hemodialysis Patient

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Abstract

Hair depigmentation induced by heptaminol has been rarely described. We report a case of a patient undergoing treatment with heptaminol (heptamyl) who had chronic renal failure and had been receiving hemodialysis since 2021. Reversal of the hypopigmentation occurred upon cessation of the medication. The precise mechanism underlying the alteration in hair color remains unknown.

Keywords: Heptaminol; Hair; Depigmentation; Skin; Chronic Renal Failure (CRF)

Introduction

Chronic Renal Failure (CRF) is associated with a variety of skin manifestations. With the introduction of hemodialysis, life expectancy extended and novel dermatological conditions are being observed as there is more time for these changes to become evident.

These skin alterations include: xerosis, pallor, pruritus and cutaneous pigmentation. Other cutaneous manifestations include Kyrle's disease; pseudo-Kaposi's sarcoma, calciphylaxis, uremic frost and purpura. The nail changes include half and half nails. Hair changes include sparse body hair. However, instances of hypopigmentation are rare. Patients with CRF are typically prescribed multiple medications, some of which may provoke cutaneous reactions. Hair color alterations can arise from various genetic, metabolic, nutritional, and acquired disorders, with certain medications capable of eliciting hair loss, stimulating hair growth, or, infrequently, causing changes in hair texture and color [1–3].

Herein, we present a case of acquired hair depigmentation in a patient with chronic renal failure undergoing hemodialysis. The onset of hair color change coincided with the initiation of heptaminol therapy and reverted following discontinuation of the medication.

Case Report

A 40-year-old woman, classified as Fitzpatrick skin type III (**Figure 1**) and CRF presented with hypopigmentation affecting the hair. She reported no other medical history and no occupational exposure to chemicals and lacked a family history of similar conditions.

In March 2021, the patient was diagnosed with a CRF of unidentified origin, subsequently necessitating thrice-weekly hemodialysis sessions since the aforementioned year.



Figure 1: Anterior photograph of the patient with black hair eyebrows and eyelashes.

In March 2023, she started treatment with heptaminol for hypotension issues, with no concurrent use of other medications. In June 2023, three months following the commencement of the medication and two years subsequent to the initiation of hemodialysis, the patient presented with the onset of hair depigmentation, affecting the eyebrows, eyelashes, pubic hair and body hair (**Figures 2-7**). Before commencing the therapy, the patient had naturally black hair, a fact corroborated by archived photographs. She denied any use of hair dye or bleaching agents. No hypopigmentation was evident on her skin, and her nails and mucous membranes appeared normal. There were no discernible clinical indicators of any other abnormalities. Serological tests for HIV and Hepatitis C were negative. In June 2023, heptaminol was discontinued after three months on heptaminol. Remarkably, approximately one-month treatment discontinuation, her hair resumed its original black coloration (**Figure 8-13**).



Figure 2



Figure 8,9



Figure 3, 4



Figure 10,11

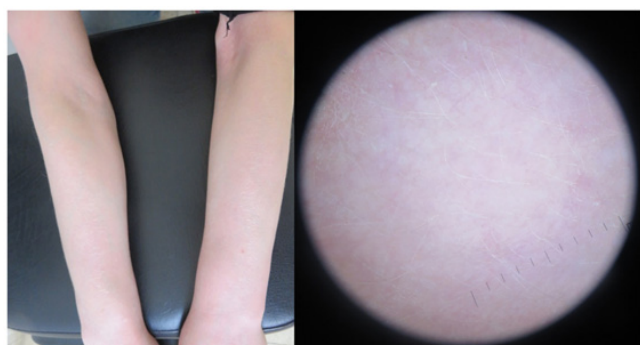


Figure 5, Figure 6: Dermoscopy of Figure 5.

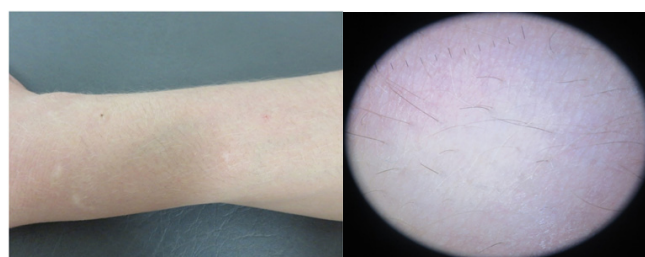


Figure 12, Figure 13: Dermoscopy of Figure 12. Figures 8 -13: Patient showing hair repigmentation after discontinuation of the drug.



Figure 7

Figures 3-7: Hair fairness in patient after 3 years of hemodialysis and three months after heptaminol initiation.

Discussion

The case of our patient presents an uncommon occurrence characterized by the onset of isolated hair hypopigmentation, manifesting two years after the initiation of hemodialysis and three months following the heptaminol initiation.

Advancements in hemodialysis have contributed to prolonged life expectancy among CRF patients, affording opportuni-

ties for various cutaneous manifestations to emerge [2,4]. A prospective study involving 363 hemodialysis patients documented six cases wherein skin and hair lightening occurred, observed between 10 months to 8 years post- initiation of hemodialysis [5]. Similarly, Udayakuma et al. identified hair abnormalities in 30% of 100 hemodialysis patients, characterized by sparse body hair and diffuse alopecia with dry, lusterless hair, though no instances of hair hypopigmentation were observed [2].

Hair color alterations can arise from changes not only in melanin production but also in the hair structure itself, influencing its optical properties. Typically, when the underlying cause is rectified, hair color tends to normalize [6].

Drug-induced hair color changes are infrequent adverse effects. While various drugs have been linked to such alterations,

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robust evidence supporting a causal relationship is often lacking. Chloroquine and certain cancer chemotherapeutic agents exhibit stronger associations with hair color changes. Other implicated drugs include p-aminobenzoic acid, calcium pantothenate, anthralin, mephenesin, minoxidil, propofol, valproic acid, and verapamil, yet further data are required for confirmation. Most drug-induced hair color changes lead to lightening, although exceptions such as Para-Aminobenzoic Acid (PABA) and select chemotherapy regimens may darken hair [7,8]. The mechanisms by which drugs enter or modify hair remain uncertain. While the precise mechanism underlying hair hypopigmentation remains elusive, some cases have been linked to disturbances in phenylalanine metabolism resulting in tyrosinase-inhibiting metabolites [4]. Studies administering oral zinc sulfate, a tyrosinase inhibitor, to mice have demonstrated significant hair shaft hypopigmentation [9].

Four cases of lightening of hair in a dialysis patient under heptaminol were reported [6,10] In our case, the temporal correlation between hair lightening and subsequent normalization aligns closely with the introduction and cessation of heptaminol, suggesting a plausible association.

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Ethical statement: The patient gave her informed consent for inclusion before she participated in the study. The study was conducted in accordance with the Declaration of Helsinki.

Informed Consent Statement: we had the consent of the patient

Conflicts of Interest: The authors declare no conflict of interest.

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