

Image Quiz

Citation: Rupasinghe SD, Abeysinghe D, 2024. Hair Fall: Exposed. Sri Lanka Journal of Medicine, pp 66-68.
DOI: <https://doi.org/10.4038/sljm.v33i2.537>

Hair Fall : Exposed

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A 25-year-old girl, with systemic lupus erythematosus presented with progressive hair loss and fever. She had been on immunosuppressive medication with good control for the past few months. Other than for a recent up titration of azathioprine, no medication modification was noted.

Her investigations revealed a pancytopenia and her inflammatory markers and complement levels were within normal range.



Figure 1



Figure 2

1. What is shown in figure 1?
2. What is the most likely diagnosis?
3. Give reasons for 2?
4. Figure 2 the same patient after treatment. What is the management?
5. What precautions would have prevented the above presentation?



ANSWER

1. Non scarring alopecia
2. Azathioprine induced bone marrow suppression and alopecia.
3. Normal complement levels and inflammatory markers are against a disease flare. Recent azathioprine dose up titration prior to the onset of symptoms.
4. Omit Azathioprine
5. TPMT assays prior to commencing azathioprine

DISCUSSION

Azathioprine interferes with purine synthesis, leading to inhibition of DNA replication and cell division, particularly affecting rapidly dividing cells like bone marrow progenitors and hair follicles (1).

Genetic Susceptibility:

Thiopurine methyltransferase (TPMT) is crucial for the metabolism of thiopurine medications such as azathioprine, 6-mercaptopurine and 6-thioguanine. TPMT deficiency or reduced activity leads to higher levels of active metabolites, increasing the risk of toxicity (2).

Myelosuppression

- Typically starts within the first few weeks to months of therapy.
- Can be detected as early as 2-4 weeks after starting the medication.

Hair Loss

- Onsets vary, typically starts within the first few months (3).
- The onset can be gradual, and the degree of alopecia can vary. (diffuse/ patchy)
- Usually reversible.

TREATMENT

- Testing for TPMT activity before starting therapy can help identify patients at risk and guide dosing.
- Regular monitoring of FBC is necessary, and dose adjustments are made based on the severity of myelosuppression.
- In cases of severe myelosuppression, temporary discontinuation of azathioprine, blood transfusions, and treatment of infections may be necessary (4).
- Alopecia
 - Adjust or reduce the dose
 - Switching to a different immunosuppressive agent might be considered if alopecia is severe and distressing to the patient.
 - Patients can use cosmetic solutions like wigs or hairpieces during periods of significant hair loss.
 - Maintaining good hair care practices can help.

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