

Tofacitinib in refractory DRESS: a case report



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Objective

Drug reaction with eosinophilia and systemic symptoms (DRESS) is a rare condition with few evidence-based guidelines. This case report describes a trial of tofacitinib in a 78-year-old man who did not respond to standard treatments.



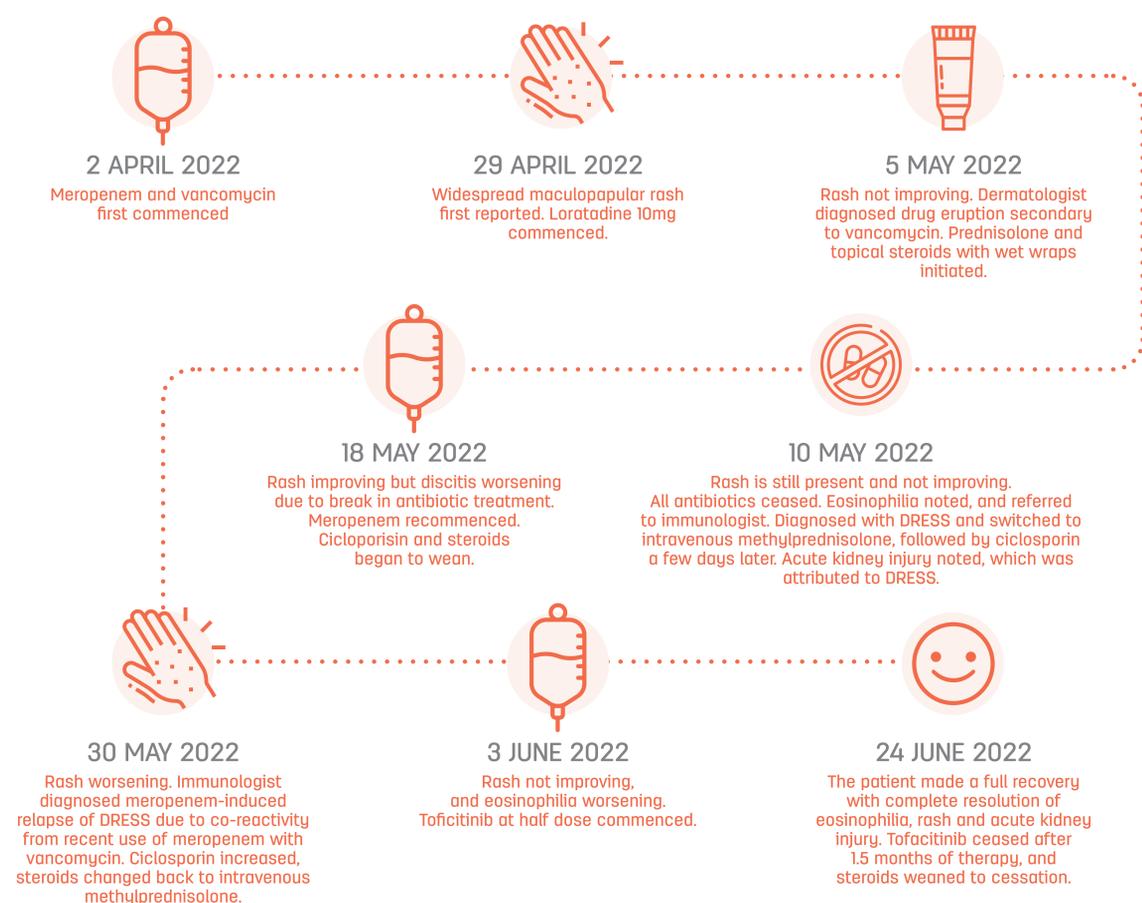
Clinical features

Mr DB, a 78-year-old man, presented to hospital with severe infective discitis. He had a background of metastatic prostate cancer managed with oral abiraterone therapy. He progressed from amoxicillin, to ceftriaxone, and finally to piperacillin/tazobactam. The infectious diseases team decided to change the treatment to meropenem and vancomycin given his immunocompromised state. He later developed DRESS secondary to vancomycin, with kidney involvement. The timeline of his diagnosis and treatment is described below.

Background and literature review

The pathophysiology of DRESS involves the activation of many cytokines, such as IL-5, IL-6, IL-10, and IL-13, which rely on the Janus kinase–signal transducer and activator of transcription (JAK-STAT) pathway¹. Tofacitinib is a JAK inhibitor, effectively blocking the signalling pathway for cytokine release and thereby decreasing the inflammatory response². This makes it an appropriate target for the treatment of DRESS. Current literature describes 2 case reports using tofacitinib for DRESS for patients with myocardial involvement², but not kidney involvement. There is no published data guiding dose modifications of tofacitinib for the treatment of DRESS in patients with impaired kidney function.

Timeline



Pharmacist intervention

- Recommended a dose reduction of tofacitinib due to renal function. Commenced on 5mg once daily, and increased to twice daily dosing once CrCl improved.
- Being a private hospital discussed funding implications with doctor and patient. Tofacitinib in DRESS is a non-PBS, non-TGA approved indication and carries an approximate cost of \$5000 per 56 tablets.
- Recommended treatment of low haemoglobin (Hb) prior to commencing therapy, as tofacitinib is not recommended to be started in patients with a Hb of less than 90.



Discussion and conclusion

Tofacitinib appears to be a valid treatment option for the treatment of refractory DRESS and can be used safely in patients with impaired renal function. This case highlights:

- The importance of pharmacist involvement with therapeutic drug decisions.
- Dose reductions are needed for patients with renal impairment.
- Monitoring of haemoglobin and full blood picture is necessary when initiating therapy with tofacitinib.
- Cross sensitivity can occur with DRESS – in our case with vancomycin and meropenem.
- Cost implications is a vital consideration in a private hospital setting.

References

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2. Damsky, W. E., Vesely, M. D., Lee, A. I., Choi, J., Meyer, A. C., Chen, M., Ahmad, T., & King, B. (2019). Drug-induced hypersensitivity syndrome with myocardial involvement treated with tofacitinib. *JAAD case reports*, 5(12), 1018–1026. <https://doi.org/10.1016/j.jidcr.2019.07.004>
3. Husain, Z., Reddy, B. Y., & Schwartz, R. A. (2013). DRESS syndrome: Part I. Clinical perspectives. *Journal of the American Academy of Dermatology*, 68(5), 693.e1–708. <https://doi.org/10.1016/j.jaad.2013.01.033>