The recovery rate from DRESS that involve liver in humans

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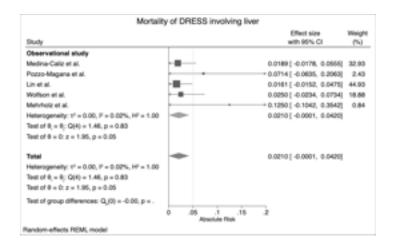
DRESS is short for drug reaction with eosinophilia and systemic symptoms, which is a kind of adverse drug reaction from some types of drugs, for instance, NSAIDs, antibiotics, antidepressants, and so on (Kroshinsky et al., 2024). Although DRESS often manifests in the skin, such as a rash or another cutaneous lesion, it can involve one or more internal organs, e.g., the liver, kidney, lung, and so on. Here, we focus on the type of DRESS that is with the hepatic involvement. We intend to investigate the prognosis of those who had a DRESS with some degree of liver damage.

There are some reviews that estimate the fatality rate of DRESS ranging from 3% to 10% (Arora et al., 2024; Taweesedt et al., 2019). However, we would like to investigate this parameter directly from the available data. There are few studies of DRESS except case reports. We look at the mortality of those studies for those who had DRESS with liver involvement (Del Pozzo-Magaña et al., 2022; Lin et al., 2015; Medina-Cáliz et al., 2024; Mehrholz et al., 2017; Wolfson et al., 2019). Because three studies actually did not have fatal cases, we have to assign a single case to each of them in order for meta-synthesis. The conclusion demonstrates a fatality rate of 2.10%, 0.00 to 4.20%.

Because there is limited data, the interpolation of the result to clinical practice should be cautious. However, for those drugs with frequent incidences of DRESS, clinicians should be vigilant, and some biochemistry functions should be routinely monitored, given their potential values in differentiating DRESS.

Figure 1

Figure 1 Mortality of DRESS involving liver



References

- Arora, N., Chalasani, N., & Rahnama-Moghadam, S. (2024). A review of drug-induced liver injury with rash, eosinophilia, and systemic symptoms (DRESS) syndrome: Cutaneous manifestations, clinical features, and management. *Clinical Liver Disease*, *23*(1). https://doi.org/10.1097/cld.000000000000000198
- Del Pozzo-Magaña, B. R., Rieder, M. J., Garcia-Bournissen, F., & Lazo-Langner, A. (2022).

 Drug reaction with eosinophilia and systemic symptoms (DRESS): A tertiary care centre retrospective study. *British Journal of Clinical Pharmacology*, 88(9), 4134–4141. https://doi.org/10.1111/bcp.15354
- Kroshinsky, D., Cardones, A. R. G., & Blumenthal, K. G. (2024). Drug Reaction with Eosinophilia and Systemic Symptoms. *New England Journal of Medicine*, *391*(23), 2242–2254. https://doi.org/10.1056/nejmra2204547
- Lin, I.-C., Yang, H.-C., Strong, C., Yang, C.-W., Cho, Y.-T., Chen, K.-L., & Chu, C.-Y. (2015).

 Liver injury in patients with DRESS: A clinical study of 72 cases. *Journal of the American Academy of Dermatology*, 72(6), 984–991. https://doi.org/10.1016/j.jaad.2015.02.1130
- Medina-Cáliz, I., Sanabria-Cabrera, J., Villanueva-Paz, M., Aukštikalnė, L., Stephens, C.,
 Robles-Díaz, M., Pinazo-Bandera, J. M., García-Cortes, M., Conde, I., Soriano, G.,
 Bessone, F., Hernandez, N., Nunes, V., Paraná, R., Lucena, M. I., Andrade, R. J., Niu, H.,
 & Alvarez-Alvarez, I. (2024). Characterization of drug-induced liver injury associated
 with drug reaction with eosinophilia and systemic symptoms in two prospective DILI
 registries. Archives of Toxicology, 98(1), 303–325. https://doi.org/10.1007/
 s00204-023-03630-0

- Mehrholz, D., Urban, A., Herstowska, M., Nowicki, R., Cubała, W., & Barańska-Rybak, W. (2017). A retrospective study of DRESS drug reaction with eosinophilia and systemic symptoms. *Psychiatria Polska*, *51*(6), 1079–1093. https://doi.org/10.12740/pp/74358
- Taweesedt, P. T., Nordstrom, C. W., Stoeckel, J., & Dumic, I. (2019). Pulmonary Manifestations of Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) Syndrome: A Systematic Review. *BioMed Research International*, 2019, 1–10. https://doi.org/
- Wolfson, A. R., Zhou, L., Li, Y., Phadke, N. A., Chow, O. A., & Blumenthal, K. G. (2019). Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) Syndrome Identified in the Electronic Health Record Allergy Module. *The Journal of Allergy and Clinical Immunology: In Practice*, 7(2), 633–640. https://doi.org/10.1016/j.jaip.2018.08.013