

Treatment in Patients DRESS (Drug Reaction With Eosinophilia And Systemic Symptoms) : Case Report

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KEYWORDS

DRESS, Complications,
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ABSTRACT

The purpose of this study is to find out treatment in patients dress (drug reaction with eosinophilia and systemic symptoms). Drug reactions with eosinophilia and systemic symptom syndrome (DRESS) are rare and potentially life-threatening severe skin adverse reactions (SCAR) The mean age at diagnosis is approximately 50-55 years and less than 10% of patients are under 20 years men : women 0.7-0.8. All drugs used by the patient during DRESS should be stopped immediately. Complications of DRESS are myocarditis, Pneumocystis jirovecii pneumonia, sepsis, liver failure, and gastro-intestinal bleeding. Systemic corticosteroids (prednisolone 1 mg/kg/day) are the gold standard of treatment in the acute phase of patients with severe organ involvement. Therefore, the importance of appropriate therapy to reduce the occurrence of complications from DRESS disease.

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Introduction

Drug reactions with eosinophilia and systemic symptom syndrome (DRESS) are rare and potentially life-threatening severe cutaneous adverse reactions (SCAR) (Jevtić et al., 2021). The clinical features of DRESS include fever, skin rash (usually maculopapular eruption), lymphadenopathy, organ dysfunction (most often liver or kidney), and blood disorders such as leukocytosis, eosinophilia, and atypical lymphocytes. The incidence of this syndrome is very low with an estimated 10 cases per million per year (de Groot, 2022).

However, DRESS shows a high mortality rate, which is around 10% if misdiagnosed and untreated (Shiohara & Kano, 2017). This DRESS syndrome occurs within 2-6 weeks after the first exposure to the causative drug, but late-onset DRESS syndrome has been reported in the months following the start of treatment (De Filippis et al., 2021). The average age at diagnosis is around 50-55 years and less than 10% of patients are under 20 years old with a male-to-female ratio of 0.7-0.8 (de Groot, 2022). The most frequent associated comorbidities were HIV 28.8%, atopy 21.9% and epilepsy 20% (Cabañas et al., 2020).

All medications used by patients at the time of DRESS are immediately discontinued (De et al., 2018). Systemic corticosteroids are the gold standard treatment in the acute phase in patients with severe organ involvement (de Groot, 2022). Currently, there are no guidelines for the clinical management of DRESS syndrome. Therapeutic management largely includes discontinuation of the suspected causative agent, symptomatic management, life support, and use of corticosteroids (Pereira-da-Silva et al., 2011).

Research Methods

A 51-year-old man came to the emergency room of PKU Muhammadiyah Surakarta Hospital on November 19, 2022 with complaints of redness all over the body since 2 days ago. Redness appears after taking cough medicine from midwives (Paracetamol, Ciprofloxacin HCl, and Grantusif containing dextromethorphan HBr, guaifenesin, diphenhydramine HCl). The patient said after taking the drug immediately caused a reaction, namely redness appeared on the face, then the drug was stopped and taken again 2 days before entering the hospital because the cough reappeared, within 1 hour redness appeared throughout the body accompanied by itching. So the patient decided to be taken to the hospital because it was getting heavier. The history of the disease is now 2 years ago for nerve treatment (dx epilepsy) Andong Hospital. The patient said 1 week ago had a seizure and was taken to Andong Hospital for 5 days. The patient denies ever suffering from such a disease and in the family also no member has a similar disease (Shiohara et al., 2017).

On physical examination, mentis compost awareness, blood pressure 110/69 mmHg, pulse rate 89 x / minute, temperature 36.6 ° C, and breathing 20 x / minute. The generalist status of the patient is within normal limits. Localized status on the face, body, hands, palms, and feet appears to be discrete multiple eritem patches. In this patient, supporting examinations were carried out with laboratory results (19/11/22) Leukocytes 11.91 x 103/ul (H), Erythrocytes (Chen et al., 2013).

4.58 million / ul, Hb 13.3 g / dL, Hct 39.8 % (L), Platelets 178 x 103 / ul, Netrophils 53.0 %, Lymphocytes 31.3 %, Monocytes 8.0 %, Eosinophils 7.1 % (H), Basophil 0.6 %, MCV 86.9 fL, MCH 29.0 pg, MCHC 33.4 g / dL, MPV 9.5 fL, NLR 1.69, RBC 0.0 x 103 / ul, SGOT 750 (H), SGPT 858 (H) and Electrolyte test results (20/11/22) Sodium 131.0 mmol / L (L), Potassium 3.70 mmol/L.



(A)



(B)



(C)



(D)

Figure A,B,C,D. macula patch eritem multiple discrete

Based on the data above, patients were diagnosed with Drug Reaction with Eosinophilia and Systemic Symptom.

Pharmacological therapy for DRESS is Methylprednisolone 125 mg/day (iv) 5 times a day for 7 days. Meanwhile, symptomatic therapy of itchy complaints can be given cetirizine 1x10 mg / day for 4 weeks, so that patients do not nausea vomiting with MP then ranitidine 2x50 mg (iv) is also given, Noroid / Desolex / Bactoderm ointment 2 dd ue. Patients are also given education to maintain cleanliness by bathing 2x a day.

In general, DRESS due to antibiotics has a better prognosis. Immunocompromised quo ad vitam : bonam, quo ad functionam : bonam, quo ad sanactionam : bonam.

Results and Discussions

In this patient, the diagnosis of DRESS (drug reaction with eosinophilia and systemic symptoms) was established based on the history and physical examination obtained, namely a 51-year-old man with complaints of redness throughout the body since 4 days ago that appeared localized on the face, body, hands, palms, and feet appeared to be macular patch eritem multiple discrete accompanied by itching. The patient has never experienced this kind of disease and denies that the patient's family has experienced something similar (Choudhary et al., 2013).

DRESS syndrome (drug reaction with eosinophilia and systemic symptoms) is a rare, complex, potentially life-threatening drug-induced hypersensitivity reaction (Cabañas et al., 2020). Text Description automatically generated (Cabañas et al., 2020).

Tabel 1 Kriteria Diagnostik Sindrom DRESS menurut RegiSCAR

No	Kriteria
1	Ruam kulit akut
2	Reaksi diduga akibat obat
3	Rawat inap
4	Demam (>38 C)
5	Nilai laboratorium (minimal 1) <ul style="list-style-type: none"> a. Limfosit dibawah atau diatas normal b. Trombositopenia c. Eosinofilia
6	Keterlibatan >1 organ dalam
7	Pembesaran KGB > 2 site

The diagnosis of DRESS syndrome can be established based on history, physical examination, and supporting examinations. The RegiSCAR group recommends diagnosis criteria for hospitalized patients with a suspected drug rash as DRESS Syndrome. The diagnosis of DRESS Syndrome can be established if it meets 3 of the criteria (Maimunah & Gaya, 2020). This patient meets all the criteria of the RegiSCAR diagnostic criteria.

Among the laboratory findings that can be detected in DRESS syndrome, various hematological abnormalities (eosinophilia, leukocytosis, atypical lymphocytes, anemia, thrombocytosis, thrombocytopenia) are detected in 50-95% (Özdemir & DAŞTAN, 2021). Elevated liver enzymes are found in 70%-80% of patients in the acute phase (de Groot, 2022). Our patients have normal eosinophilia and platelet limits. In addition, there is evidence of involvement of internal organs, namely the liver which is characterized by an increase in serum transaminases SGOT 750 (H), SGPT 858 (H). Liver involvement can develop into liver failure, which is the main cause of death in DRESS syndrome patients (Maimunah & Gaya, 2020).

The exact pathogenesis of DRESS remains unclear but the immune response is drug-specific. It is a type IV-b hypersensitivity reaction mediated by T cells, (Th2 profile) which through the release of certain cytokines and chemokines such as IL-4, IL-5 and IL-13 preferentially activates and recruits eosinophils. In this Th-2 profile immune reaction the thymus and activation-regulated chemokine (TARC) play an important role by recruiting Th2 polarized T lymphocytes into the site of local inflammation. IL-33,

produced by cutaneous macrophages in DRESS patients in addition to triggering eosinophilia, attracts type 2 congenital lymphocytes (ILC2s) into the skin via its specific ST2 receptor (Cardones, 2020).

Complications of DRESS are myocarditis, Pneumocystis jirovecii pneumonia, sepsis, liver failure, and gastro-intestinal hemorrhage (de Groot, 2022). The most commonly affected organs are the liver (75%), kidneys (37%), and lungs (32%). Hepatic involvement, which is the most common visceral manifestation of DRESS, and can lead to fulminant hepatic failure up to death. Kidney involvement is known to occur at higher frequencies (Miyagawa & Asada, 2021).

All medications used by patients at the time of DRESS should be discontinued immediately. According to de Groot, DRESS management with systemic corticosteroid administration (prednisolone 1 mg/kg/day) is the gold standard treatment in the acute phase in patients with severe organ involvement. Fitzpatrick suggested giving prednisone at a dose of 0.5–1 mg/kgBB. This dose is maintained until there is no further worsening of the disease. After that the dose can be lowered slowly with an average decreasing dose of 20% per day. Patients in this case received systemic corticosteroid treatment, namely intravenous methylprednisolone 1x125 mg equivalent to the dose at prednisone 156.25 mg / kg BB. Steroids are tapering off very slowly, to prevent recurrence of various symptoms and immune restoration inflammatory syndrome (IRIS), ranging from cytomegalovirus disease to autoimmune disease (Cho et al., 2017).

Education for DRESS patients is to maintain skin hygiene and hygiene, bathe twice a day with moisturized water and soap, and educate patients not to scratch itchy body parts to prevent scratching wounds (Maimunah & Gaya, 2020).

Conclusion

This case describes a patient with symptoms of DRESS. Patients are diagnosed based on history, physical examination status and supporting examinations. Corticosteroid therapy is given in this case. In addition, patient education is needed, especially to prevent secondary infections.

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