Drugs reaction with eosinophilia and systemic symptom (DRESS) is a life-threatening adverse drug reaction. A 58-year-old female patient presented to our hospital with nausea and vomiting 2 weeks after elective coronary artery bypass grafting (CABG). She had used metoprolol, asetilsalicylic acid and furosemide as medication after operation. Blood tests showed neutropenia, low eosinophil levels, increase of liver biomarkers. Our case had fever, a morbilliform rash, bone marrow failure and hepatitis. Clinical (fever, exanthema, facial oedema) and laboratory (panstopenia with liver and pulmonary involvement) findings raised the suspicion of DRESS and the patient was started on 1 mg/kg iv prednisone daily and intravenous immunoglobulin (IVIG) at 2g/kg. She died on the seventh ICU day. DRESS syndrome is a fatal drug hypersensitivity reaction with cutaneous and systemic involvements. Multidisciplinary care is important for a successful treatment.

Keywords: Coronary artery bypass grafting; DRESS syndrome; eosinophilia

DRESS syndrome (Drug reaction with eosinophilia and systemic symptom) is characterized by the presence of at least three of the following: fever, rash, eosinophilia, atypical circulating lymphocytes, lymphadenopathy and hepatitis. The estimated frequency of DRESS syndrome varies between 1/1000-1/10000, and the mortality rate prediction is 10%. The diagnosis of DRESS should be kept in mind when a skin rash, fever, hypereosinophilia and organ involvement is present. Liver is the most common affected organ. Cutaneous manifestations generally occur between 2 and 6 weeks after the first dose of culprit drug. Besides the systemic glucocorticoid therapy, intravenous immunoglobulin therapy is essential for life-threatening forms.
Herein, we report a case of severe DRESS syndrome secondary to bypass surgery.

**CASE REPORT**

A 58-year-old female underwent elective coronary artery bypass grafting (CABG) with two vessels in our hospital. There was no specificity in her other medical history. The patient was discharged on postoperative day 6 after CABG on metoprololol, asetilsalycilic asit and furosemide. Two weeks later, she was readmitted with nausea and vomiting.

On admission laboratory results showed normal hemoglobin level (12.3g/L), mild neutropenia (white cell count, 3.27/L), low eosinophils (0 x 0’3/UL), high C-reactive protein (4.4 mg/L), and hepatic dysfunction (alkaline phosphatase, 164 U/L; alanine aminotransferase, 459.6 U/L; aspartate aminotransferase, 861.2 U/L). Blood pressure was of 140/90 mm Hg, pulse rate was of 96 beats per minute and temperature was of 37°C. Abdomen ultrasonography was normal. An Echocardiography was normal with the ejection fraction 50%. After two days a maculopapular rash appeared on the face and also there was associated fever (39°C) and lethargy. Empirical antibiotic and antiviral treatments initiated while awaiting culture results. Multiple cultures (sputum, blood, and urine) were negative. Serology for common viruses were all negative.

Her rash worsened in the next two days, the rash turned to erythroderma, erythematous rash was on the trunk and extremities, a facial dermatitis and a widespread maculopapular rash on the arms, trunk and lower extremities had begun, hypoxia and dyspnea started, fever persisted, and she developed pancytopenia (Figure 1, 2). Malignancy was excluded by bone marrow biopsy.

The patient was transferred to the intensive care unit (ICU) and given specific treatment (systemic glucocorticoids and intravenous immunoglobulins). She entubated because of hypoxia and dyspnea.

Laboratory results showed anemia (hemoglobin, 8.7g/L), deep neutropenia (white cell count, 0.10 10’3U/L), high C-reactive protein (24mg/L), thrombocytopenia (30 10’3/UL). Her condition rapidly worsened with hemodynamic instability and the patient died on the seventh ICU day. The consent form was obtained from the patient’s legal representative.

**DISCUSSION**

DRESS syndrome begins acutely within two months of the start of treatment and includes a serious skin rash associated with fever, lymphadenopathy, hematological abnormalities, and multiple organ involvement. Anticonvulsants, sulfonamides and gold salt are the most frequently blamed drugs.

The hematological system is often affected. Approximately 30% of cases have an eosinophilia.
(-2.0 x 109 eosinophil/L). Hyperosinophilia probably plays a role in visceral involvement. To our knowledge, this is the first case of dress syndrome without eosinophilia and after a big surgery.

Corticosteroids are the first step of treatment and should be started at the beginning of DRESS syndrome. 1.0 mg/kg/day of prednisolone is the first line therapy. Emre et al. reported full remission with systemic corticosteroids in eleven patients. In patients with fatal systemic symptoms such as bone marrow failure or fulminant hepatitis, IVIG at 2 g/kg over 5 days should be added to the treatment. We used IVIG for three days in our patient too. Then she died.

Pancytopenia, leukocytosis, coagulopathy, gastrointestinal bleeding, pre-existing chronic renal insufficiency, and multiple comorbidities are poor prognostic indicators.

Two scoring systems according to diagnostic criteria have been developed. Our patient was a probable case of DRESS with a RegiSCAR score of 5. Firstly potentially serious conditions must be excluded (infections, malignancy, autoimmune disorders, connective tissue disease).

Eshki et al. reported that 11 of 15 patients with severe dress syndrome had multiorgan failure. Lee et al. reported that the liver was affected in 80% of cases in a study of 25 patients. Ichai et al. reported an overall mortality of 40% in a series of 16 patients with severe and steroid resistant liver injury. Pulmonary involvement may also be present. Our case had fever, a morbilliform rash, bone marrow failure, hepatitis and pulmonary failure. The nonantibiotic sulfonamide furosemide causing dress was reported twice before. Our patient used furosemide too, but we have no proof that if the culprit drug was that.

Diagnosis of DRESS syndrome is difficult to establish, suspicion is the first step and it is so important to diagnose early and withdraw of the offending drug. Multidisciplinary care is important for a successful treatment. When other symptoms exist DRESS can be thought even without eosinophilia.

Source of Finance
During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest
No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions