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EDİTÖRE MEKTUP / LETTER TO THE EDITOR

Successful intravenous foscarnet desensitization

Başarılı intravenöz foskarnet desentizasyonu

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To the Editor,

Cytomegalovirus (CMV) is a life-threatening, opportunistic pathogen associated with significant morbidity and mortality in immunocompromised patients [1]. CMV retinitis is the most common ocular opportunistic complication and is a serious cause of vision loss in immunocompromised patients. Existing drugs such as ganciclovir, valganciclovir, cidofovir, and foscarnet are highly active against cmv, but long-term treatment with these approved drugs is associated with dose-limiting toxicities and thus limits their use. Allergic drug reactions are unpredictable signs and symptoms that occur shortly (minutes to hours) after a particular drug is used at the appropriate dose. Allergic drug reactions can cause simple skin rashes or serious life-threatening anaphylactic or systemic reactions. It is the recommended alternative drug use in drug reactions. However, desensitization is life-saving when there is no alternative medicine or when the patient's clinic is in question. Skin tests or in vitro tests are sometimes of low sensitivity or unavailable, and drug challenge tests may be dangerous or strictly prohibited in the case of severe skin reactions. Since our patient also had resistant cmv infection and we did not have an alternative drug, the drug had to be given by desensitization. In this case, we aimed to present the desensitization protocol in a patient with a hypersensitivity reaction to foscarnet.

The patient, who was followed up with the diagnoses of multiple food allergies, severe atopic dermatitis, hyperkeratosis, nail dystrophy, hypogammaglobulinemia (low IgG and IgM) for 2 months, was given human immunoglobulin monthly starting from the age of 20 months. No pathogenic mutation was found in the patient who underwent whole exon screening for primary immunodeficiency. Anti-ıge treatment (omalizumab) was started in the patient who did not respond to the topical and systemic corticosteroid treatment given for atopic dermatitis. Pneumonia was observed in the lung imaging of the patient who was hospitalized at the age of 3 because of high fever and sleepiness. Cmv dna 199. 570 copies were detected. The patient was started on iv ganciclovir therapy. Her treatment with valaganciclovir was continued for 11 months in her outpatient follow-up. Valaganciclovir treatment was discontinued in the patient whose cmv dna was found to be negative.

Routine checks continued. No pathology was observed in the neurological examinations for vision loss of the patient who applied with the complaint of decreased vision at the 2nd month follow-up. In the fundus examination of the eye, diffuse exudate and periphlebitis around the right optic disc, opacity, and opacities in the inferior retina of the left eye were observed. CMV retinitis was primarily considered in the patient and intravenous ganciclovir and foscarnet treatment was started. At the 2nd hour of foscarnet treatment, diffuse facial flushing and macular erythema were observed on the body, but no findings suggestive of anaphylaxis such as cough, shortness of breath, and hypotension were found.

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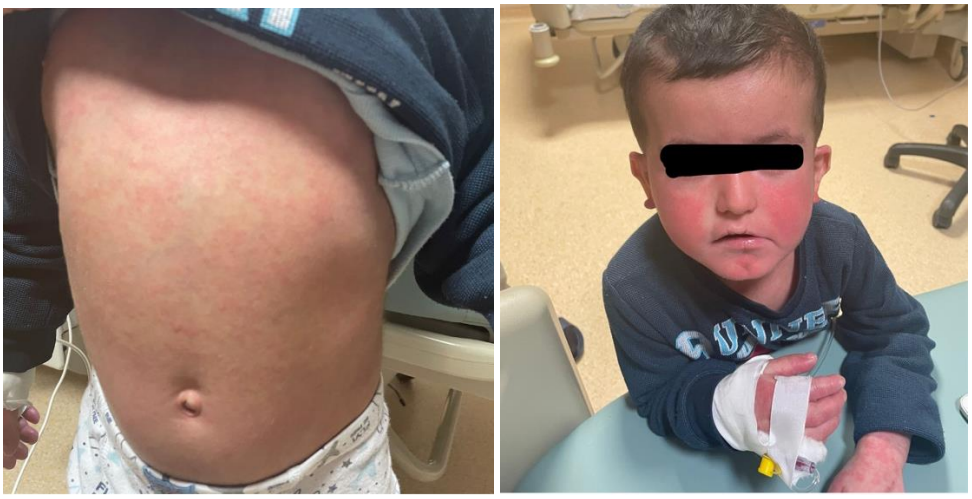

Figure 1. Diffuse facial flushing and macular erythema due to foscarnet treatment

Desensitization protocol

Since the patient had vision loss and was not suitable for intravitreal treatment, desensitization was performed to continue foscarnet treatment. Skin prick test and intradermal test could not be performed because the patient had previously received steroids due to existing atopic dermatitis and macular erythema. It was prepared in three different concentrations (0.03 mg/ml, 0.3 mg/ml, 3 mg/ml) to start the treatment as soon as possible due to vision loss. Premedication was administered by giving 1 mg/kg of antihistamine and 1 mg/kg of steroid. It was applied in 12 steps with increasing doses every 15 minutes. The total dose reached 720 mg. The patient completed desensitization without any problems such as increased rash, cough, shortness of breath, and angioedema. The doses that the patient should take every 8 hours were continued to be administered without any problems [2]. Consent was obtained from the patient's family.

Table 1. Densitization protocol

	Dilution	Applied volume	Dose	Minute
1/100	0.03 mg/ml	0.625 ml	0.0187 mg	15 min.
1/100	0.03 mg/ml	1.25 ml	0.0375 mg	15 min.
1/100	0.03 mg/ml	2.5 ml	0.075 mg	15 min.
1/100	0.03 mg/ml	5 ml	0.15 mg	15 min.
1/10	0.3mg/ml	1.25 ml	0.375 mg	15 min.
1/10	0.3mg/ml	2.5 ml	0.75 mg	15 min.
1/10	0.3mg/ml	5 ml	1.5 mg	15 min.
1/10	0.3mg/ml	10 ml	3 mg	15 min.
1/1	3 mg/dl	2.5 ml	7.5 mg	15 min.
1/1	3 mg/dl	5 ml	15 mg	15 min.
1/1	3 mg/dl	10 ml	30 mg	15 min.
1/1	3 mg/dl	194. 375 ml	661.59 mg	2.42 hour
Total		240 ml	720 mg	

In this case, we will discuss the desensitization protocol for foscarnet-induced hypersensitivity reaction, which has not been done frequently before. Drug allergy is a growing problem worldwide, affecting children and adults whose diagnosis and treatment are not fully standardized. In addition to

conventional treatments, new drugs have been developed that specifically target the cause of the disease, especially for patients with malignancies, immune deficiencies and chronic inflammatory disease. For patients who require such molecules, it can be difficult to find an alternative drug when hypersensitivity reactions occur. Therefore, desensitization is the best option when there is no alternative treatment, and also when alternative treatments are considered to be therapeutically inferior or more toxic[3].

To our knowledge, this is the first case of successful desensitization due to an early hypersensitivity reaction to foscarnet. Since our patient's cmv infection was resistant and we were faced with an important problem such as vision loss, we decided to desensitize the patient. Our result shows that desensitization to foscarnet is safe and effective in allergy. Because of a possible allergic reaction during drug desensitization, finding an alternative drug for treatment is the first choice. However, if there is no other option, drug desensitization should be considered under the supervision of an allergist in severe anaphylaxis [4].

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