

RENAL TRANSPLANTATION AND CYTOMEGALOVIRUS RETINITIS

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ABSTRACT

We report a case of cytomegalovirus retinitis in a 63 year old man who underwent renal transplantation 7 months ago. He was treated with parenteral ganciclovir and effective response occurred after 4 weeks treatment.

Key Words: Renal transplantation , CMV retinitis and CMV infection.

INTRODUCTION

Cytomagalovirus (CMV) is an important cause of morbidity and mortality in immunocompromised patients(1). Depression of cell-mediated immunity because of immunodeficiency syndromes or secondary to immunosuppressive medications predisposes to symptomatic CMV infections (2).

CMV retinitis is the leading cause of visual loss in patients with the acquired immunodeficiency syndrome (AIDS), affecting an estimated 20% to 30% of patients (3,4). One of the presentations of CMV in the late posttransplant period is CMV chorioretinitis (5). CMV is the most important infectious complication of transplantation, affecting more than 70% of all recipients, the

infection rate is significantly higher in those who were seropositive before transplantation (85%) and lower in seronegative recipients(6).

CASE REPORT

A 63-year-old man underwent renal transplantation from an allograft donor 7 months ago and was admitted to hospital with the complaint of pain and blurred vision of left eye. After transplantation he was treated with cyclosporin and systemic corticosteroid, but acute graft-versus-host disease subsequently developed, which was treated with pulse steroid.

Visual acuity was 10/10 in the right eye and 5/10 in the left eye. The right eye showed 2+ and the left eye 1+ cells in the anterior chamber. Funduscopic examination revealed active retinitis lesions with white granular patches in the midperipheral areas of the left eye. There were intraretinal hemorrhages and retinal vasculitis in the active retinitis areas. Flourescein fundus angiography revealed patchy hyperfluorescence. Laboratory examinations revealed no pathology, except for posttransplantation positive anti-CMV IgG and IgM titers, unfortunately there was not information about pretransplant condition. His CD4 lymphocyte count was 1500 cells/mm³.

Parenteral ganciclovir 5 mg/kg two times daily and adjuvant CMV immune globulin one time weekly were begun with a diagnosis of CMV chorioretinitis. Ten days later his visual acuity was 10/10 in the right eye and 6/10 in the left eye. There was decrease in the anterior chamber inflammatory reaction in the both eyes. There were not any changes in the retinitis lesions. One month later after parenteral ganciclovir treatment, his visual acuity did not change, but anterior chambers were clear in the both eyes and retinitis revealed obvious improvement.

DISCUSSION

Cytomegalovirus retinopathy is the most common opportunistic infection of the eye. Other

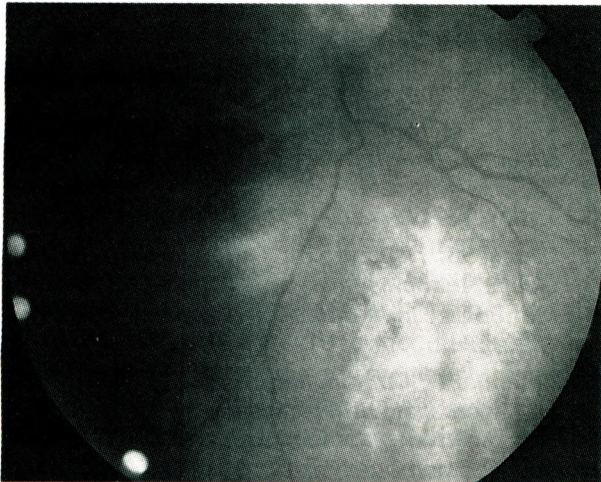


Fig.1.: Active CMV retinitis, before treatment.

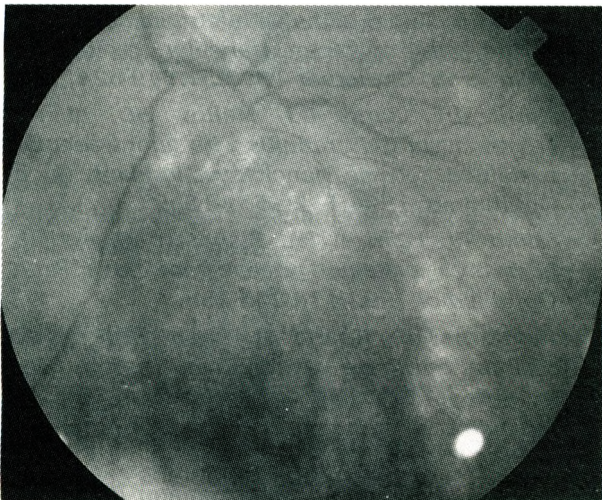


Fig.2.: 4 weeks after parenteral ganciclovir treatment CMV retinitis regressed.

pathogens include mycobacterium avium, toxoplasma gondii, cryptococcus neoformans, herpes simplex virus, herpes zoster virus, histoplasma capsulatum and candida species (7). The underlying systemic disorders associated with development of cytomegalovirus retinitis include severe combined immunodeficiency syndrome, AIDS, congenital cytomegalovirus infection, previous renal or bone marrow transplantation and chemotherapy for acute lymphocytic leukemia. The diagnosis of CMV retinitis primarily is clinical. Necrotizing retinitis with or without hemorrhage is the usual presentation of CMV retinitis. In adults, the location of CMV retinitis with respect to the macula and optic nerve usually determines visual status. Retinal detachment is a common sequel of CMV retinitis, with an incidence in the range 24-50% (7,8). Differential diagnosis of CMV retinitis is very important. Elkins et al reported 5 cases of ocular toxoplasmosis misdiagnosed as CMV retinopathy in immunocompromised patients: one case of SLE, under immunosuppressive therapy, two cases of bone marrow transplantation for chronic myelogenous leukemia and two cases of AIDS (9). These patients were treated with intravenous ganciclovir for presumed CMV retinopathy. Several days later clinical condition has progressed. Retinal and vitreous biopsies were performed. Toxoplasma gondii cysts were identified in the retina and vitreous. Therefore ganciclovir was discontinued and oral antiparasitic therapy with pyrimethamine, sulfadiazine and clindamycin were started. Several days later significant clinical improvement has developed. Başçıl et al reported one case of CMV chorioretinitis after renal transplantation. Fundoscopic examination has revealed no pathology except for a positive CMV IgM titer, which has been negative prior to the transplantation. Parenteral ganciclovir 5 mg/kg two times daily was begun with a diagnosis of CMV retinitis. Ten days later periorbital cellulitis has developed. Smears have taken from around the affected eye have revealed gram positive cocci and methiciline sensitive staphylococcus aureus has grown in bacterial culture. Subbactam-ampiciline was then started 1.5 gram four times daily. Although fungal culture has been negative, empiric antifungal therapy was begun with amphotericine B. After 6 weeks with triple regimen exophthalmus, complete loss of vision and bacteremia with S.

aureus have developed. Evisceration of affected eye was carried out to prevent the spread of infection (5). Rate of response to antiviral therapy, progression of periorbital cellulitis and bacteremia seem to be related to immune condition. Our case treated successfully with parenteral ganciclovir and adjuvant CMV immune globulin. His immune condition was normal, CD4 lymphocyte count was 1500 cells/mm³, and did not occur any complication during treatment. Adjuvant therapy of CMV retinitis with CMV immune globulin, has been advocated on the basis of decreased humoral immunity and antibody response in children with AIDS and other causes of immunocompromise (10).

Traditionally, ganciclovir and foscarnet have been used effectively, as monotherapy for the treatment of CMV retinitis. These drugs are virostatic, poorly absorbed orally, and associated with significant systemic toxicities. Ganciclovir at a dose of 5 mg/kg i.v. two or three times daily for three weeks is generally effective for the treatment of CMV chorioretinitis. The most common complication is leukopenia(11). Many studies have reported intraocular sustained release ganciclovir implant is more effective than parenteral ganciclovir for the treatment of CMV retinitis, also ocular and systemic complications are less than parenteral ganciclovir treatment (12-14). Cidofovir is an acyclic nucleotide analog, that has been demonstrated to be effective for patients who have relapsing retinitis on intravenous ganciclovir or foscarnet (15).

CMV retinitis is a rare condition after renal transplantation. Immune condition of patient is very important. Early recognition and prompt treatment is necessary to prevent serious complications of CMV chorioretinitis.

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