Bilateral Optic Neuritis Treated with Intravenous Corticosteroid

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Abstract

Introduction: Optic neuritis is a term used to refer an inflammation of the optic nerve. Bilateral optic neuritis in adults has been considered rare particularly in individuals without known systemic inflammatory or autoimmune disorders.

Purpose: To describe cases of acute bilateral optic neuritis in adult treated with intravenous corticosteroid in M. Djamil Hospital, Padang, Indonesia.

Method: We performed a retrospective study review of medical records from patients referred to neuro-ophthalmology clinic in M. Djamil Hospital with acute bilateral optic neuritis from January 2016 to April 2017. Exclusion criteria included previous multiple sclerosis or myelopathy, known systemic disorders or medications associated with optic neuropathy, uveitis, or neoplasm. Patients received intravenous methylprednisolone followed by tappering oral metilprednisolone. Visual acuity, visual fields, ophthalmoscopy finding, and neurological evaluation were recorded at baseline and at 1 month or 3 months.

Result:

patients without systemic autoimmune or neurologic diseases diagnosed with bilateral optical neuritis by documenting the patients' clinical profle [3]. Te efectiveness of corticosteroid therapy, visual recovery time, visual outcome and neurologic symptoms were followed up for 3 months.

Methods

We conducted a retrospective study of patients diagnosed with bilateral optical neuritis from January 2016 to April 2017. Patients were included if they experienced symptoms such as acute bilateral dysfunction diagnosed by optic nerve abnormalities, complete ophthalmological examination, laboratory analysis and brain CT scan were performed at the time of symptoms appear, and follow up for at least 3 months [4]. Exclusion criteria includes previously known multiple sclerosis, previous optic neuritis or myelopathy, systemic abnormalities known to be associated with optic neuropathy, use of drugs associated with toxic optic neuropathy, previous history of uveitis, systemic neoplasms, or known intracranial abnormalities.

Visual acuity examination is done for each eye on arrival and at 3 days of follow up, 2 weeks, and 3 months [5]. Visual acuity is assessed by using Snellen chart. Perimetry is performed by analysis of Humphrey (Humphrey Instruments, San Leandro, CA, USA) (Program 30-2) with the mean deviations recorded in decibels (dB) as outcome measures. Color vision impairment was assessed using the Farnsworth 28 Hue color plate. Te presence or absence of orbital pain when moving is also documented. Te examination of contrast sensitivity was assessed with the Pelli-robson chart. Neurologic examination is performed at baseline and at least for 3 months. All patients were performed a brain CT scan and an orbital CT scan. Each patient underwent laboratory tests including routine blood tests, electrolytes and blood chemistry.

All patients were admitted to hospital and received intravenous methylprednisolone 250 mg per 6 hrs for 3 days followed by oral prednisone 1 mg/kg BW/day for 11 days [6,7]. For about 11 days followed by a gradual reduction in the dose according to clinical conditions. We analyzed eyesight for worse eyes at the beginning, determined with sharp eyesight followed by color vision and contrast sensitivity.

Results

Demographic and presentation evaluations (Table 1), there were 9 patients with age range 21-45 years who met the study criteria that came to neuro-ophthalmology clinic in M. Djamil Hospital, Padang. Tere are 4 men and 5 women with an age range of 21-45 years. 8 patients had no prior history and were considered to have an unknown etiology (89%), whereas 1 patient (11%) had a previous history of viral infection. 6 patients (100%) experienced bilateral pain with eyeball movement. Laboratory tests show normal results in almost all patients.

some previous studies which found that optical neuritis is more common in women. Acute vision loss is the main clinical symptom in all patients, according to typical symptoms of optic neuritis. In addition, orbital pain when moved is also a symptom of the most complained by the patient. Color vision and contrast sensitivity vary with all patients.

Although the presentation and severity of visual impairment in cases of bilateral optical neuritis is quite dramatic, the visual recovery is excellent in almost all patients except in one patient. A marked asymmetric decrease of visal acuity occurs in one patient (case 2). Examination of orbital CT scans and brain CT scans are within normal limits in all patients.

The absence of RAPD in almost all patients with bilateral optic neuritis results from bilateral afferent dysfunction. Cases with RAPD may be due to an unequal dysfunction between the afected optic nerve. The etiology of infection, usually virus, is associated with bilateral optical neuritis in children and unilateral demyelination optic neuritis, but systemic processes are not generally present in our patients.

Corticosteroids are the frst choice in the management of bilateral optical neuritis. All patients were treated with high-dose corticosteroids based on Optic Neuritis Treatment Trial (ONTT). Based on the severity of vision loss and the profle of corticosteroid side efects, we chose to treat patients intravenously followed by oral corticosteroids. Our fndings support previous reports suggesting that bilateral optical neuropathy suspected due to infammatory processes, has a generally good prognosis and is responsive to high-dose corticosteroid therapy.

Conclusion

Bilateral optic neuritis without myelopathy occurs more frequently in adults than previously thought. Diagnosis and therapeutic approach in patients with symptoms and signs of optic neuritis should be performed thoroughly in both patients with and without systemic abnormalities or previous autoimmune disorders. Bilateral visual impairment improves with corticosteroids without additional immunomodulatory therapy. The sequelae of neurological abnormality or recurrent visual loss may occur, so follow up should be 6 to 12 months. Idiopathic acute bilateral optic neuritis is a rare case that needs further study, especially its treatment with corticosteroid therapy to improve visual outcome.

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