Effectiveness of Low-Dose Intravenous Methylprednisolone for Moderate to Severe and Active Graves’ Ophthalmopathy in Thai Patients

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Background: Active Graves’ ophthalmopathy (GO) is a quite rare condition and its incidence seems to decline in recent years, while many physicians have limited experience in this disease. The standard treatment of this condition, intravenous methylprednisolone, was suggested at 500 mg weekly for 6 weeks, followed by another six-weekly infusion of 250 mg, for a total dose 4.5 g. However, an alternative regimen with lower dose has been commonly used in Asian countries.

Objective: We presented our experience with lower and shorter duration of methylprednisolone in treatment of moderate to severe and active GO.

Materials and Methods: Active GO patients treated with intravenous methylprednisolone during 2011-2017 in Theptarin Hospital were studied. The pattern of treatments, changes in clinical activity score (CAS), and overall ophthalmic assessment were evaluated. Flare-ups and adverse effects were also reviewed.

Results: Our retrospective cohort included 43 Thai patients with hyperthyroid Graves’ disease (93%) and euthyroid Graves’ disease (7%). A total of 33 patients (females 78.8%, mean age 41.2±13.0 years, median time of symptoms 4 months) were followed-up at least 6 months after treatment (duration of follow-up 23.0±16.6 months). The regimen of 1 g methylprednisolone with three weekly intervals (3 g in total) was the most common administered intravenously in 60% of the patients. The mean cumulative dosage of methylprednisolone was 3.6±2.0 g (range 1-12 g). All patients were noted with the improved inflammatory score at 12 weeks (baseline CAS 3.7±0.8 vs CAS 1.5±1.2 at 12 weeks). Flare-up after 12 weeks was observed in 4 patients (11.8%). There was improvement of diplopia and proptosis in 91.2% and 64.7% of the patients, respectively. No serious side effects were observed, except the temporarily elevated blood pressure during infusion in two hypertensive patients, 1 case of transient urticaria, and 1 case of hyperglycemia.

Conclusions: Intravenous methylprednisolone therapy is an established treatment of active moderate to severe GO. In our experience, active GO could be resolved in the selected patients who presented early with pulse steroid a dose of 500 mg to 1000 mg at weekly intervals for 3-4 weeks instead of a fixed 3-month long schedule at the cumulative dosage of 4.5 g. While the cumulative dosage must be high enough to reduce the risk of relapse/progression of GO, the dosage should be also low enough to prevent adverse effects. Nonetheless, future studies are warranted to evaluate the efficacy of individual dosing strategy in Asian patients.

Keywords: Graves ophthalmopathy, methylprednisolone, low-dose