Treatment for refractory myasthenia gravis

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SUMMARY An 8 year old girl with ocular myasthenia gravis was treated with high dose intravenous immunoglobulin and high dose intravenous methylprednisolone. Ocular symptoms recurred seven months after the start of the immunoglobulin. She has been in remission for more than 12 months after two courses of intravenous methylprednisolone, and administration of oral prednisolone was discontinued.

Recently, high dose intravenous immunoglobulin and high dose intravenous methylprednisolone have been reported to improve the symptoms of generalised myasthenia gravis.^{1 2} We have treated a patient with ocular myasthenia gravis refractory to several anticholinesterase compounds and oral prednisolone with pulses of intravenous immunoglobulin and methylprednisolone.

Case report

A girl (born in May 1977) started to have ptosis of the right eye at the age of 1.5 years. Clinical examination and tests confirmed ocular myasthenia gravis without thymoma and she was treated with anticholinesterase compounds. At the age of 3.5 years ptosis and diplopia worsened and prednisolone 20 mg was given on alternate days along with pyridostigmine bromide 90 mg/day and distigmine bromide 5 mg/day. The ocular symptoms were inversely correlated with the doses of prednisolone and she alternated between transient relief and aggravation of her symptoms. Treatment with anticholinesterase compounds was unsatisfactory.

At the age of 5 years ptosis and diplopia worsened during reduction of prednisolone dose (figure A). The dose of ambenonium chloride was gradually increased and administration of pyridostigmine bromide and distigmine bromide was discontinued. Treatment with ambenonium bromide was unsatisfactory and administration of prednisolone 20 mg on alternate days was again started.

At the age of 8.4 years she had a prolonged relapse and prednisolone dose was increased to 30 mg on alternate days without improvement of symptoms. Oral prednisolone 55 mg (2 mg/kg) was

given on alternate days for four months, but paralysis of the extraocular muscles and ptosis of the both eyes did not improve. Because of the unfavourable effects of prednisolone she was treated with high dose intravenous immunoglobulin (figure B). The daily dose of anticholinesterase compounds and prednisolone was kept constant before and during initial immunoglobulin treatment. Improvement of the ocular symptoms began on day 4 after the start of immunoglobulin treatment and all the symptoms disappeared within 14 days. The treatment was followed by a booster infusion given every two weeks plus oral administration of prednisolone and pyridostigmine. The dose of oral prednisolone was gradually reduced to 10 mg on alternate days. However, ocular symptoms recurred seven months after the start of treatment with intravenous immunoglobulin. The booster infusion of intravenous immunoglobulin was repeated five times every two or three days. An improvement of the symptoms was not remarkable and intravenous immunoglobulin treatment was discontinued in February 1987. Doses of prednisolone and pyridostigmine were increased, but ocular symptoms did not improve.

In July 1987 she was treated with intravenous methylprednisolone because she had been treated with oral prednisolone for a long period and oral prednisolone 55 mg on alternate days did not lead to a satisfactory improvement. The improvement of the ocular symptoms was not remarkable after the initial intravenous methylprednisolone and a second course was administered. The ptosis and paralysis of the both eyes improved within the next 14 days. During her remission the daily dose of anticholinesterase medication was gradually increased and the dose of oral prednisolone was reduced. In January 1988 paralysis of downward movement of the right eye was noted, but the symptom was minimal and rapidly subsided with increasing the dose of pyridostigmine. This may indicate that the patient became responsive to pyridostigmine after treatment with intravenous methylprednisolone. In June 1988 administration of oral prednisolone was discontinued. In October 1988 she was in remission and she is now receiving pyridostigmine 130 mg/day. The antiacetylcholine receptor antibodies have occasionally increased but this increase has not been correlated with the clinical symptoms.

stature, Cushingoid appearance, hypertension, and osteoporosis are common, and attempts should be made to reduce the dose of oral prednisolone. Therefore, intravenous immunoglobulin and intravenous methylprednisolone may be useful when patients are restricted in daily activities despite prolonged administration of corticosteroids and anticholinesterase compounds.

In patients with generalised myasthenia gravis thymectomy has become increasingly recommended and this may be indicated in patients with refractory ocular myasthenia gravis. Patients with ocular myasthenia gravis do not usually require thymectomy, however, and there is no consensus that children with ocular myasthenia gravis refractory to corticosteroids and anticholinesterase medication should have a thymectomy.³

References

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