The Leaves of Fall

DUQUESNE UNIVERSITY
MYLAN SCHOOL OF PHARMACY

PIC QUESTION OF THE WEEK: 10/11/10

Q: Can mega-doses of corticosteroids be used orally for the treatment of acute attacks of multiple sclerosis?

A: Multiple sclerosis (MS) is a potentially debilitating neuromuscular disorder associated with destruction of the myelin sheath in the *white* matter of the *central* nervous system. Symptoms are highly variable and include optic neuritis, paresthesias, spasticity, weakness, sensory loss, bladder dysfunction, constipation, etc. Symptoms may be mild to incapacitating. The disease generally develops between the ages of 20 and 40 years, but has been observed in the very young and in the elderly. In some cases, progression is rapid and the patient may be unable to ambulate even relatively early in the course of their disease. MS is generally categorized into one of four clinical courses of disease: relapsing/remitting; secondary progressive; primary progressive; and progressive/relapsing. Treatment is usually directed at management of initial attacks/ exacerbations or initiation of therapy that may potentially alter the course of the disease. Acute treatment often consists of the administration of corticosteroids while long-term (disease modifying) therapy includes agents such as glatiramer (Copaxone®), various interferons, mitoxantrone (Novantrone®), and natalizumab (Tysabri®). An oral agent (fingolimod; Gilenya) has recently been approved for relapsing forms of MS. High doses of intravenous (IV) corticosteroids (primarily methylprednisolone) have traditionally been administered for the management of severe exacerbations of MS. The most commonly cited regimen is 500 mg to 1g of IV methylprednisolone daily for three to five days. Some authors have recommended an extremely high dose of prednisone (1 g daily for 3 to 5 days) as an alternative to IV methylprednisolone. This regimen is much less expensive than parenteral therapy and eliminates the need for hospitalization. These doses of prednisone are generally well tolerated; however, they may result in some degree of gastric intolerance and can produce transient effects on serum glucose and sodium levels. In one study, a single dose of 1 g IV methylprednisolone produced a similar area under the concentration-time curve (AUC) at 24 hours as 1.25 g of prednisone. In some situations, oral administration of high doses of prednisone can produce comparable responses to those observed with IV methylprednisolone in patients suffering from acute exacerbations of multiple sclerosis.

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