Giant Cell Arteritis

Management of Giant Cell Arteritis and Polymyalgia Rheumatica

Dr Fahim Khan advises on the management of Giant Cell Arteritis and Polymyalgia Rheumatica

Giant Cell Arteritis (GCA), also known as temporal arteritis is a granulomatous arteritis of the aorta and its major branches, with a predilection for the extracranial branches of the carotid artery. It often involves the temporal arteries.

Polymyalgia

Rheumatica (PMR) is a syndrome classically characterised by symmetric aching and morning stiffness in the shoulder and hip girdles.

PMR occurs in 50 per cent of patients with GCA, whereas approximately 15 per cent of patients with PMR develop GCA.

Epidemiology

GCA is relatively common in Europe and the United States, with annual incidence of 0.49-27.3 per 100,000 persons > 50. The incidence of PMR was 52.5 per 100,000 persons >50 in one study.

Almost all patients who have GCA are older than 50 years. PMR is 2-4 time more common than GCA and its incidence also rises with age particularly after the age of 50. Women are twice likely as men to have GCA or PMR.

Pathophysiology

Both humoral and the cellular immune systems have been implicated in pathogenesis. Increased amounts of endothelial leukocyte adhesions molecules, IL-6 and immune complexes have been found in the sera of patients with GCA and PMR. Reduced levels of cytotoxic T cells occur in some patients.

The vasculitis in GCA tends to be patchy. The most severely affected arteries are the superficial temporal, vertebral, ophthalmic and posterior ciliary arteries. Intimal thickening, with prominent cellular infiltration, is usually present. Pathologic exam of joints with PMR may show lymphocytic synovitis. Synovial fluid analysis may be consistent with mild inflammation.

Presentation

Polymyalgia Rheumatica PMR is classically characterized by symmetric aching and morning stiffness in the shoulder and hip girdles, neck and torso. Fatigue, malaise, anorexia, weight loss and low-grade fever may occur.

Synovitis in peripheral joints make PMR difficult to distinguish from Rheumatoid Arthritis. Joint exam shows decreased active range of motion of the shoulders, neck and hips due to pain. Muscle strength is usually normal.

In GCA, headache is the most common initial symptom.

The severity and location are variable. Scalp tenderness is also common and may be localized to temporal or occipital arteries or may be diffuse.

The temporal arteries may be thickened, erythematous and tender. Vision loss occurs in approximately 15 per cent of patients and may be an early symptom.

It results from ischemic optic neuropathy secondary to the involvement of ophthalmic and posterior ciliary arteries. Involvement of the facial artery may result in pain and spasm with mastication known as jaw claudication.

Involvement of the aortic arch and its branches occurs in 10-15 per cent of patients and may cause reduced BP in one or both arms, arm claudication and focal cerebral ischemia.

Fever of unknown origin, respiratory tract symptoms like dry cough, throat pain etc, neurologic symptoms e.g. mononeuritis multiplex in GCA most commonly affecting the shoulders that mimics C5 radiculopathy, stroke, transient ischemic attacks, dementia, hallucinations and

Syndrome of inappropriate antidiuretic hormone secretion is some of the atypical manifestations of giant cell arteritis.

Diagnostic workup

The American College of Rheumatology criteria for the classification Giant Cell Arteritis (GCA) require that three of the following five criteria be met for diagnosis:

- Age of onset >50 years
- New headache
- Temporal artery tenderness or decreased pulsation unrelated to atherosclerotic disease
- Erythrocyte sedimentation rate(ESR) >50 mm/hour
- Arterial biopsy specimen showing vasculitis with mononuclear cell infiltration, granulomatous inflammation or multinucleated giant cells.

Perform temporal artery biopsies in patients with suspected GCA or those with PME who have symptoms or signs suggestive of GCA.

To increase the chances that a biopsy will demonstrate vasculitis, the biopsy should be several centimetres long and include a section of a palpable abnormality if present. If the biopsy of one temporal artery is negative, perform contralateral biopsy if the clinical suspicion is high.

Although, it is traditional to obtain temporal biopsy quickly, evidence suggests that the pathologic features persist for at least two weeks after the start of glucocorticoid treatment. The diagnosis of Polymyalgia Rheumatica (PMR) is clinical and should be considered in elderly patients with symmetric aching and morning stiffness in the shoulder and hip girdles, neck and torso.

The ESR is classically elevated and can exceed 100 mm/hr, but values <40 mm/hour may be seen in a few patients. Elevated C- reactive protein (CRP) levels may be more sensitive than the ESR.

Normocytic normochromic anemia of chronic inflammation and thrombocytosis may be seen. Rheumatoid Factor and Anti Nuclear Antibodies are usually negative. Serum creatine kinase is normal.

Treatment

Polymyalgia Rheumatica (PMR) is characterized by a prompt response to low-dose steroids, oral prednisone 7.5 – 20mg daily, preferably in a divided dose.

Increase the dose to a maximum of 20mg daily if symptoms are not well controlled within 1 week.

Maintain the effective dose for 4 weeks after the aching and stiffness have resolved. Reduce the dose by 10 per cent every 2-4 weeks until the minimum dose that suppresses symptoms is reached. Once the dose is less than 10mg daily, reduce it no faster than 1mg/month.

Initial ESR and CRP, as well as initial responses to therapy, provide useful prognostic information. Most require treatment for 3-4 years, but withdrawal of steroids after 2 years is worth attempting.

In most patients, PMR improves and steroid therapy can eventually be discontinued.

Giant Cell Arteritis (GCA). Prednisone, 40-60mg daily, preferably in a divided dose should be given to any patients in whom GCA is strongly suspected. Patients with suspected GCA who have experienced transient visual loss for a few hours should be admitted and given high-dose intravenous methylprednisolone e.g. (1000mg/day) for three to five days and urgent ophthalmologic opinion should be taken and such patients should ideally be jointly managed by an ophthalmologist and a rheumatologist.

Rheumatica is classically characterised by symmetric aching and stiffness in the shoulder and hip girdles

'The diagnosis of Polymyalgia Rheumatica is clinical and should be considered in elderly patients with symmetric aching and morning stiffness in the shoulder and hip girdles, neck and torso'

TABLE 1

Possible side-effects of long term glucocorticoid therapy

- Diabetes
- Cataracts
- Fluid retention
- Hypertension
- Osteoporosis
- Osteonecrosis
- Weight gain
- Iatrogenic Cushing's
- Proximal weakness
- Infection
- Easy bruising of the skin
- Peptic ulcer disease
- Psychiatric disturbance (e.g. depression, mania, psychosis)
- Alopecia
- Sweats
- Tremor
- Insomnia

One month after symptoms resolve, prednisolone can be tapered by 10 per cent every week or two.

The rate of prednisolone tapering should be determined by total clinical picture produced by the patient's symptoms, physical findings and inflammatory markers like ESR or CRP. Once patients with GCA reach 15 mg of prednisolone, decrease of 1 mg every 2 or so weeks may reduce the chance of flare.

GCA tends to last several months to years and steroids can eventually be reduced or discontinued. Some patients may require a longer duration of therapy.

Unfortunately, 50-80 per cent of patients with PMR or GCA relapse during the first year as prednisolone is tapered. Flares are defined clinically.

Most patients are unable to completely taper off prednisolone for one to two years and a substantial minority will require some prednisolone usually in the range of 5 to 10 mg- for longer periods.

Complications from prednisolone therapy develop in most patients being treated for Polymyalgia Rheumatica or Giant Cell Arteritis.

To prevent osteoporosis, patients starting prednisolone should receive 1500-1800mg of calcium with 400-800 U of vitamin D. Bone Density scans should be performed and those with osteopenia and osteoporosis should be started on bisphosphonates.

Yearly Dexa scan should be done to monitor for worsening of osteoporosis while the patients are being treated with prednisolne.

Steroid-sparing drugs such as methotrexate or azathioprine may be used in those patients at increased risk for steroid-related side effects, but strong evidence of efficacy is lacking.

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References on request.