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Case Report

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Successful add-on clarithromycin treatment for polymyalgia rheumatica

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ABSTRACT

Macrolide antibiotics (MACs) such as erythromycin and clarithromycin (CAM) provide not only anti-bacterial activity but also anti-inflammatory and immunomodulatory effects. Considering anti-inflammatory effects, several recent studies have reported the successful treatments of rheumatoid arthritis and polymyalgia rheumatica (PMR) treated using CAM. Herein, we also report another case of patient with PMR treated using CAM. A 72-year-old woman with PMR was treated using prednisolone (PSL) (20 mg/day). When muscle pain disappeared and C-reactive protein (CRP) decreased, the PSL dosage was gradually reduced without any sign of recurrence. When the PSL dosage was decreased to 5 mg/day, muscle pain returned, and CRP was increased. The PSL dosage was successfully increased to 8 mg/day. The PSL dosage was gradually decreased without any sign of recurrence. When the PSL dosage was again decreased to 5 mg/day, muscle pain returned, and CRP increased. There was no significant finding in the examinations made especially for accompanying giant cell arteritis. As an alternative to increasing the PSL dosage, CAM was added. About four weeks after CAM treatment, the muscle pain disappeared, and CRP became negative. This case suggests that treatment using CAM may be effective in some cases of PMR.

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Introduction

Macrolide antibiotics (MACs) such as erythromycin, (EM), and clarithromycin (CAM) provide not only antibacterial activity, but also anti-inflammatory and immunomodulatory effects.

Considering anti-inflammatory effects, successful treatments with MACs for diffuse pan bronchiolitis, cystic fibrosis, chronic obstructive pulmonary disease, and bronchial asthma have been reported. Regarding rheumatic diseases, several recent studies have reported the successful treatment of rheumatoid arthritis using CAM as an anti-inflammatory drug. [1, 2] We have also reported several cases of patients with polymyalgia rheumatica (PMR) successfully treated using CAM as an anti-inflammatory drug.[3,5] Herein, we report another case of patient with PMR treated using CAM.

Case Presentation

A 72-year-old woman presented with stiffness and muscle pain in her neck, shoulders, and hipgirdle. These symptoms gradually worsened over 10 days. Physical examination revealed muscle tenderness in these areas. There was neither swelling nor deformity of the joints.

Laboratory findings were as follows: white blood cell count, 6,750 /μL (neutrophils, 74.1%; eosinophils, 1.2%; monocytes, 4.7%; lymphocytes, 19.7%); hemoglobin, 10.5 g/dL; platelet count, 32.0 × 10^4/μL; creatine phosphokinase, 31 U/L (normal range, 50–210 U/L); C-reactive protein (CRP), 4.93 mg/dL (normal value, <0.30 mg/dL); erythrocyte sedimentation rate, 45 mm/h (normal range, 3–15 mm/h); rheumatoid factor, 5 IU/L (normal value, <15.0 IU/L); and antinuclear antibody titer, less than ×40 (normal value, less than ×40). Urinalysis was within normal limits. No abnormal findings suggestive of infection could be found in the systemic survey, including the chest roentgenogram. Finally, the patient was diagnosed with PMR according to the classification criteria.[6] The patient was treated with prednisolone (PSL) (20 mg/day) for 2 weeks and subsequently PSL (15 mg/day) for 2 weeks. Four weeks after initiating PSL treatment, muscle pain disappeared, and CRP decreased to 0.20 mg/dL. Therefore, the PSL dosage was decreased further. The patient was successfully treated with PSL (12.5 mg/day) for 2

weeks and subsequently PSL (10 mg/day) for 2 weeks without any sign of recurrence. Thereafter, the PSL dosage was successfully decreased at a rate of 1 mg/day per 4 weeks. WhenPSL dosage was 5 mg/day, muscle pain returned, and CRP increased to 1.31 mg/dL. Therefore, the PSL dosage was increased to 8 mg/day. Four weeks after PSL (8 mg/day) treatment, muscle pain disappeared, and CRP decreased to 0.20 mg/dL. Therefore, the PSL dosage could be gradually decreased to 6 mg/day without any sign of recurrence. When PSL dosage was decreased again to 5 mg/day, muscle pain returned, and CRP increased to 3.14 mg/dL. On physical examination especially for accompanying giant cell arteritis, there was no loss of pulse,cardiac or vascular murmur, claudication in the jaw, and vision problems. Stenosis or occlusion was not detected in the computed tomography angiography of the aorta and its branches for possible giant cell arteritis, especially since the CRP value increased when the PSL dose was decreased. After obtaining informed consent, CAM (400 mg/day) was added to PSL (5 mg/day) as an alternative to increasing PSL dosage, in consideration of its anti-inflammatory effects.

Two weeks after initiating CAM treatment, muscle pain disappeared, and CRP decreased to 0.33mg/dL.

Discussion

PMR is an inflammatory rheumatic disease in the elderly. Glucocorticoids (GCs) remain the mainstay of treatment. GCs therapy usually dramatically improves the clinical picture, but approximately one-third of patients experience disease recurrence when the GCs dosage is reduced. Moreover, long-term use of GCs causes adverse reactions. MACs have been shown to affect several pathways of the inflammatory process, such as the production of pro-inflammatory cytokines, including interleukin (IL)-6.[7] Because it has been reported that serum IL-6 levels increase in strong association with disease activity in PMR [8], the efficacy of CAM in the present case might be due to anti-inflammatory effects caused by its suppression of IL-6 production. Moreover, our patient who had already received PSL was treated with CAM. Since MACs have steroid-sparing effects via their influence on corticosteroid metabo,[9] not only the above-mentioned

anti-inflammatory effects but also their steroid-sparing effects might have resulted in the improved signs and symptoms. Because elderly patients tend to suffer from chronic diseases that are exacerbated by the use of GCs, such as diabetes mellitus, osteoporosis,and hypertension, add-on CAM treatment may be helpful in reducing conventional GS dosages.

However, the long-term use of antibiotics promotes the growth of drug-resistant bacteria. Recently, EM900, a derivative of EM, that exhibits anti-inflammatory and/or immunomodulatory effects without antibacterial activity, was developed.[10] Therefore, treatment with EM900 may be helpful to elderly patients with PMR without the appearance of drug-resistant bacteria.

Under the existing circumstances, add-on CAM treatment may represent useful options forelderly patients with PMR.

Declaration

The authors have no conflicts of interest to declare.

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