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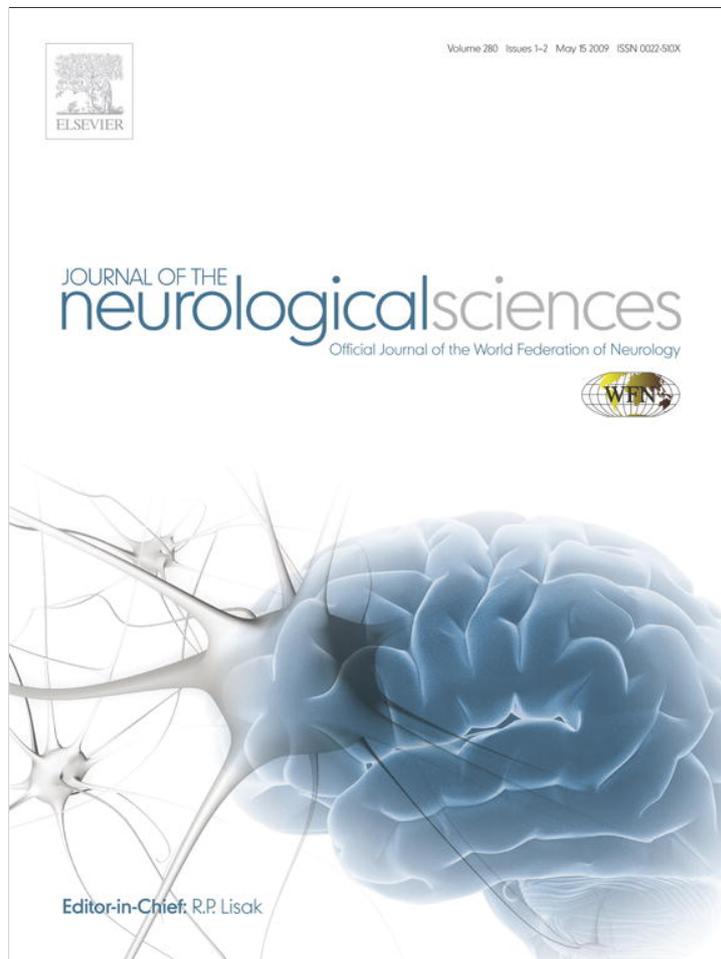
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Short communication

Prulifloxacin as a trigger of myasthenia gravis

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ABSTRACT

Fluoroquinolones has been rarely associated with exacerbation of myasthenia gravis (MG). We present a case of MG following a treatment with prulifloxacin, a new broad-spectrum oral fluoroquinolone. Fluoroquinolones of any generation may interfere with neuromuscular transmission and should be avoided in patients with MG.

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Fluoroquinolones has been associated with exacerbation of myasthenia gravis (MG) and are currently contraindicated in patients affected by MG [1]. We describe a patient in whom exposure to prulifloxacin, a new broad-spectrum oral fluoroquinolone agent recently approved in some countries of the European Union, unmasked subclinical MG.

A 77 year-old woman, with an uneventful history, was prescribed prulifloxacin (600 mg/day for 6 days) after an acute episode of cystitis. Two days after the end of treatment, she developed left sided ptosis. She was then admitted to a neurological department. A detailed history excluded previous signs and symptoms suggestive of MG. On the other hand, a brain MRI excluded acute vascular or compressive lesions and a colour Doppler ultrasound of epiaortic vessels did not show functionally relevant stenosis. Thyroid scintigraphy was compatible with thyroiditis, and metimazole was prescribed. Antibodies anti-acetylcholine receptors were found to be positive. No evidence of thymoma was found. EMG was not performed. Therapy with pyridostigmine and prednisone was started with immediate improvement of left sided ptosis. The patient was discharged from hospital 11 days after admission.

Fluoroquinolones have been associated with anecdotal reports of MG. A literature search conducted on Pubmed and EMBASE revealed a total of 7 publications for a total of 8 cases (one report described two cases) summarized in Table 1. Exacerbation of previously diagnosed MG has been reported with the use of ciprofloxacin, pefloxacin,

ofloxacin, and norfloxacin [2,3,5–7]. In one case ciprofloxacin unmasked subclinical MG that had not been diagnosed [4]. In addition, a severe respiratory crisis was associated to levofloxacin administration in a patient subsequently diagnosed of thymoma [8].

Fluoroquinolones contain quinolone moiety, as chloroquine, quinine and quinidine. All these drugs may interfere with neuromuscular transmission postsynaptically for their direct effect on AChR ion channel, as shown by a dose-dependent decrease in the amplitude of miniature endplate potentials (MEPPs) [9,10].

On the basis of the current evidence, we postulate an association between the treatment with prulifloxacin and the unmasking of subclinical MG in our case. The present case was reported to the Italian Pharmacovigilance System (registered as number 87438) and to the manufacturer of the drug.

Fluoroquinolones are widely prescribed drugs and neuromuscular side effects are probably very rare. To our knowledge, no case of MG related to a course of prulifloxacin has been reported to date. According to the published literature, fluoroquinolones of any generation should be avoided in patients with MG.

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Table 1

Reported cases of MG related to fluoroquinolones therapy.

Reference	Patient age/sex	Drug	Latency	Previous diagnosis	Symptoms
Moore B, 1988 [2]	39/F	Ciprofloxacin	2 days 8 h	Yes	Shortness of breath, muscle weakness of limbs and neck
Rausser EH, 1990 [3]	39/F	Norfloxacin	2 h	Yes	Blurred vision, dysphagia, shortness of breath, muscle weakness
Mumford CJ, 1990 [4]	73/M	Ciprofloxacin	2 days	No	Dysphagia, dysarthria, left ptosis
Azevedo E, 1993 [5]	25/F	Ofloxacin	2 days	Yes	Ptosis, diplopia, dysphagia, dyspnea, muscle weakness of limbs and neck
Vial T, 1995 [6]	45/F	Pefloxacin	1 h	Yes	Bilateral ptosis
Roquer J, 1996 [7]	76/F	Ciprofloxacin	3 days	Yes	Diplopia, left ptosis, generalized weakness
Roquer J, 1996 [7]	79/M	Ciprofloxacin	5 days	Yes	Facial weakness, progressive dysphagia
Gunduz A, 2006 [8]	45/M	Levofloxacin	1 day 12 h	No	Respiratory insufficiency

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