

Symptom Exacerbation in Tourette Syndrome Due to Bacterial Reinfection

To the Editor: Successful treatment with antibiotics of Tourette syndrome associated with an infection, eg, *Mycoplasma (M.) pneumoniae*, has been described.¹ There is only 1 prospective study² concerning long-term follow-up and recurrences of symptoms in patients with pediatric autoimmune neuropsychiatric disorders associated with streptococcal infection (PANDAS) treated with antibiotics. No systematic long-term approaches regarding individual antibiotic therapy strategies in non-streptococcal-induced Tourette syndrome are available in the literature.

We report the case of a boy suffering from Tourette syndrome associated with *M. pneumoniae* infection who experienced only short-term improvement of tics after antibiotic therapy, but steady recovery after treatment of possible sources of reinfections with antibiotics.

Case report. Our patient, a 7-year-old boy, had developed motor tics such as blinking, grimacing, and jerking his head and shoulders, as well as vocal tics with coughing and cheeping, in the last 2 years. Within this time, the patient had been treated with diverse antidopaminergic agents, but with no sufficient improvement of tic severity, so treatment with those medications was stopped. On admission in 2007, his symptoms had changed dramatically within 2 months into complex motor tics: kicking his legs backward, smashing his knees against each other, and showing aggressive behavior at school.

To quantify the tic severity, tics were measured with the Tourette Syndrome Global Scale (TSGS).³ A TSGS score of 71.3 was recorded. Bacteriological clarification showed elevated antibody titers up to 1:80,000, and positive immunoglobulin responses were found in the cerebrospinal fluid, which was further confirmed by the detection of *M. pneumoniae* DNA in a polymerase chain reaction. The patient's immune status was unremarkable, and other bacterial antibodies including streptococcal antibodies were not elevated. No abnormalities were detected through magnetic resonance imaging, electroencephalogram, or clinical examination.

The patient was treated with erythromycin 900 mg/d for 4 weeks, leading to full remission of tics within 2 weeks and to a decreased antibody titer of 1:80 of *M. pneumoniae*. Since he still had increased motoric restlessness and learning disabilities, his TSGS score was judged to be 10. Two months later, the tics re-exacerbated such that his TSGS score was 56.2, and his serum *M. pneumoniae* titer increased to 1:320. Again, erythromycin 900 mg/d was administered for 4 weeks. His tics subsided promptly to a TSGS score of 10, and his *M. pneumoniae* titer fell to 1:160. After a further 3 months, the patient's Tourette syndrome symptoms worsened again (TSGS score of 60.7).

His family members were considered as a possible source of infection, and laboratory examination of the family members was performed. Results showed an *M. pneumoniae* titer of 1:1,280 for his brother, 1:1,640 for his mother, and 1:160 for his father. In a weight-dependent dose, erythromycin was administered for 4 weeks to all 4 family members. After 2 months, all of the titers decreased, and our patient was again tic-free (TSGS score of 10). In the follow-up period of 2 years, Tourette syndrome remained stable (tics remained in remission), and the continuously controlled *M. pneumoniae* showed stabilized titers of 1:80.

Reinfection with agents among closely attached persons might offer an explanation for the course of exacerbations and remissions in Tourette syndrome, a factor that has been possibly disregarded in the past. *M. pneumoniae* is a common cause of respiratory tract

infection that is aerogenic or transmitted through direct contact.⁴ Our case report could encourage the performance of prospective studies in order to evaluate bacterial reinfection as a source of the waxing and waning course of Tourette syndrome.

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