The new supply of BIG is expected to be available by February 1, 1992. The clinical trial will open formally for patient enrollment on that date. Botulism immune globulin should be administered as early in the course of infant botulism as possible to stop the progression of symptoms, which generally include constipation, weakness, ptosis, disconjugate gaze, weak cry, poor suck, diminished gag reflex, expressionless face, head lag, diffuse hypotonia, and, not infrequently, respiratory arrest. Physicians who suspect infant botulism may obtain BIG for their patients by calling the study office's 24-hour, 7-days-a-week telephone number: (510) 540-2646.

REFERENCES

Exacerbation of Motor Tic and Induction of New Tic by Haloperidol Use
CPT JOSE M. DIAZ, MC, USA
KEVIN G. SMITH, MS
COL MICHELNE MACCARIO, MC, USA
San Francisco, California

Tic disorders may be classified as simple tics, chronic motor tics, or Tourette’s syndrome.1-2 Chronic motor tics occur early in childhood or before the age of 21 years. The severity and type of symptoms tend not to change over time, and chronic motor tics are usually limited to a single type of tic. The duration of the illness is lifelong. Chronic motor tics have specific diagnostic criteria,1,3 but their prevalence is not known.2 Therapy for chronic motor tics is rarely needed because the tic is usually not severe. Chronic motor tics should be differentiated from simple tics, which are the mildest of the tic disorders, lasting as long as a year.1-3 Tourette’s syndrome and chronic motor tics appear to be genetically related.4-6 Haloperidol was first used in 1961 to treat Tourette’s syndrome.7 Case reports indicate that haloperidol therapy provides good to excellent control of tics.1 A Tourette-like syndrome has been described as occurring as a result of the long-term use of neuroleptic drugs10 and following low-dose short-term neuroleptic drug therapy11 among patients with previously diagnosed neurologic or psychiatric disorder.

We report a case of chronic motor tics exacerbated by short-term treatment with haloperidol and the concomitant development of a new tic.

Report of a Case
The patient was a 19-year-old man in whom motor tics developed at 4 years of age. The tic consisted of a repetitive turning of the neck to the right side. This symptom was exacerbated by stress, anxiety, or strenuous physical activity. The patient reported only one type of tic and denied ever having vocal tics, coprolalia, palilalia, or echolalia. While on military duty in Korea, the stress of his overseas tour seemed to exacerbate his tic, which became more frequent and of greater amplitude. He was treated with haloperidol, 0.5 mg three times a day. A week after the treatment was started, the tic became even more frequent and a “new tic” developed. He described this new tic as stereotypic buccal movements without vocalizations or sounds. After 20 days of treatment, the haloperidol therapy was discontinued. The new tic disappeared, and the frequency and amplitude of the chronic tic returned to its initial state.

Discussion
Tourette’s syndrome, as a genetic disorder, has been studied extensively.4,6,10-12 Although chronic motor tics have been considered a different diagnostic disorder,1,3 they have been genetically linked to Tourette’s syndrome4-6; some reports question this possibility, however.13 Tourette’s syndrome can be exacerbated by central nervous system stimulants14,15 and cocaine.16 A Tourette-like syndrome has been described as occurring during the long-term use of neuroleptic agents, during drug withdrawal,8 and with short-term neuroleptic drug therapy.9 This Tourette-like syndrome is considered analogous to tardive dyskinesia associated with chronic neuroleptic drug therapy.9 The pathophysiologic mechanism for the development of Tourette-like syndrome is thought to be a “chemical denervation supersensitivity of dopamine receptors following chronic neuroleptic blockade.”9,17

In patients with Tourette’s syndrome treated with haloperidol, acute dystonias, dyskinesias, akathisias,18 or an exacerbation of their tics can develop.20 Karagianis and Nagpurkar reported the case of a 10-year-old boy in whom features of Tourette’s syndrome developed while he was being treated with haloperidol for behavior problems.21 His symptoms worsened as the haloperidol dose was decreased and improved as the dose was increased. In cases with an acute exacerbation or an initial onset of motor tics after

TABLE 1.—Treatment Options for Tics and Tourette’s Syndrome

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage, mg at bedtime</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>0.5, to be increased every 5 d up to 10/d</td>
<td>Depression, sedation, dysthria, weight gain, tardive dyskinesia, cognitive impairment, interference with motivation and learning, and exacerbation of tics</td>
</tr>
<tr>
<td>Pimozide</td>
<td>1, to be increased up to 10/d</td>
<td>Electrocardiographic changes —T-wave inversion, U waves, QT prolongation, and bradycardia—and mental depression</td>
</tr>
<tr>
<td>Clonidine</td>
<td>0.05, to be increased gradually to 0.15 to 0.30/d</td>
<td>Sedation, hypotension, and dizziness</td>
</tr>
</tbody>
</table>

*From Van Woert.24
**Other less effective medications are phenothiazines, tetrabenazine, and clozapine.
neuroleptic drug therapy, the most probable mechanism is presynaptic dopamine blockade. Tics can be induced by carbamazepine,22 tricyclic antidepressants,23 and central nervous system stimulants.15 We were, however, unable to find a report in which treatment with haloperidol exacerbated chronic motor tics.

Our patient had two complications of neuroleptic drug use. He suffered an acute exacerbation of his chronic motor tic disorder and the occurrence of a new motor tic. We propose that the pathophysiological mechanism for both conditions was mediated by presynaptic dopamine blockade. Symptoms of Tourette’s disorder—tics, coprolalia, obsessive behaviors—have been found to worsen with haloperidol treatment.20 Given the ample evidence associating chronic motor tics with Tourette’s syndrome, it is logical to expect similar reactions to treatment with haloperidol. Haloperidol, however, has been shown to prevent the worsening of tics induced by central nervous system stimulants.14 In our case, treatment with haloperidol exacerbated a preexisting motor tic and induced a new tic.

Given the possible complications associated with haloperidol treatment, there are several options available for the treatment of chronic motor tics and Tourette’s syndrome (Table 1).24 For most patients who have an exacerbation of motor tics or the development of Tourette-like syndrome after neuroleptic drug therapy, these will resolve with the discontinuation of the drug.20 Treatment with an anticholinergic agent could be another available alternative. Physicians should know of the possible development of motor tics or exacerbation of preexisting motor tics during treatment with haloperidol. It is important to recognize them as neurologic rather than psychological manifestations25 so they may be appropriately managed.

REFERENCES

Pursuing an Occult Carcinoma in a Patient With Subacute Cerebellar Degeneration and Anticerebellar Antibodies

Need for Vigorous Follow-up

JOHN E. GREENLEE, MD
H. ROBERT BRASHEAR, MD
Salt Lake City, Utah

KURT A. JAECKLE, MD
Charlottesville, Virginia

ANDREW GELERIS, MD
Covina, California

KENNETH JORDAN, MD
Loma Linda, California

Paraneoplastic cerebellar degeneration is an uncommon complication of systemic malignancy. The disorder is characterized clinically by the rapid or subacute development of extreme ataxia, dysarthria, and nystagmus, producing a cerebellar deficit of almost unique severity.1,2 Pathologic findings in affected patients include extensive, often complete loss of Purkinje cells, with variable loss of granule cells.1,2 The disorder has been associated with a number of malignant neoplasms, including adenocarcinomas of the ovary, fallopian tube, uterus, and breast, small-cell carcinoma of the lung, and Hodgkin’s disease.1,3 Paraneoplastic cerebellar degeneration may develop as long as two or more years before the detection of a malignant tumor, during its course, or at a time when the carcinoma is thought to be in remission.1,4

From the Neurology Service, Veterans Affairs Medical Center, and Department of Neurology, University of Utah Medical Center, Salt Lake City; the Departments of Neurology and Behavioral Medicine and Psychiatry, University of Virginia Medical Center, Charlottesville; the Magan Medical Clinic, Covina, California; and the Department of Neurology, Loma Linda University School of Medicine, Loma Linda, California.

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Reprint requests to John E. Greenlee, MD, Neurovirology Research Laboratory (151B), Veterans Affairs Medical Center, 500 Foothill Dr, Salt Lake City, UT 84148.