

A clinical approach to a patient with praziquantel hypersensitivity

Shih-Wen Huang, MD Gainesville, Fla.

Praziquantel (Biltricide, Miles Pharmaceuticals) is a 2-(cyclohexylcarbonyl)-1,2,3,6,7,11b-hexahydro 4*H*-pyrazino [2,1-*a*] isoquinolin-4-one with molecular formula: C₁₉H₂₄N₂O₂, widely used as a trematodicide for the treatment of infections caused by schistosomes, liver fluke, and cysticercus cellulose. No incidents of praziquantel hypersensitivity have been previously reported. We report a case of praziquantel hypersensitivity and its subsequent pharmacologic treatment.

CASE REPORT

A 10-year-old boy had a generalized tonic-clonic seizure. A computerized tomography scan and a magnetic resonance imaging study showed three calcified lesions near the frontoparietal area of the brain, with enhancing lesions characterized by surrounding edema. His cysticercosis titer was positive (1:320). History revealed that he had eaten pork with suspicious infestation. He was treated with praziquantel, prednisone, and phenytoin for a total of 14 days. On day 14, praziquantel and prednisone were discontinued. No adverse reaction occurred, and the patient was discharged, still receiving daily doses of phenytoin.

One month later the boy was readmitted because of a seizure. A computerized tomography scan confirmed the earlier findings and revealed that the local edema had worsened. Physical findings were normal, except for mild twitching and weakness of the right arm. Phenytoin and prednisone, both at doses of 1 mg/kg, were given for the first 4 days. On day 5, prednisone was discontinued, and he was started on a 14-day course of praziquantel (600 mg every 8 hours) and a 16-day course of dexamethasone (4 mg intravenously every 6 hours). On day 6, after the second dose of praziquantel, severe, generalized urticaria developed, which covered the entire body and head. No respiratory symptoms developed. Praziquantel was discontinued, and urticaria resolved with diphenhydramine and dexamethasone on day 7. Because praziquantel is the only known drug for the treatment of cysticercosis, the boy was referred for an allergy consultation.

On day 8, he was premedicated with hydroxyzine (10 mg every 6 hours), dexamethasone (4 mg intravenously every 6 hours), and prednisone (15 mg every 8 hours) 6 hours before treatment with praziquantel was resumed. We

administered 13 doses of praziquantel at 15-minute intervals. The first six doses were 18 mg each, the next three were 180 mg each, and the final three were each 360 mg. Thus the patient received a cumulative dose of 1746 mg, which is slightly less than the recommended daily dose (1800 mg) for a patient of his body weight.

The patient seemed to tolerate the treatment well, but within 1 hour after the last dose was given, generalized urticaria, difficulty swallowing, and tightness of the chest developed. He did not have wheezing or respiratory distress. On day 9, hydroxyzine and prednisone were continued without praziquantel, and urticaria resolved. On day 10, oral administration of praziquantel was resumed at doses of 300 mg every 8 hours, along with hydroxyzine and prednisone as necessary. No reaction occurred with subsequent dosing. He was discharged on day 12, with the above medications to be continued. Praziquantel and hydroxyzine were discontinued on day 24, and prednisone was continued for an additional 2 weeks at a tapering dose. Phenytoin was continued for 6 months. At a 12-month follow-up, the boy was well and without complaint. At a follow-up 18 months after the onset of the disease, a magnetic resonance imaging study showed a single, faint calcified spot. There was no tissue edema. Electroencephalogram was also normal, and he had been free of anticonvulsants for 12 months, without sequelae.

THE CASE IN CONTEXT

An adverse reaction developed in our patient while he was on a multidrug regimen that included phenytoin, a drug known to cause hypersensitivity reaction. However, the time of exposure at the onset of the reaction suggested that hypersensitivity to praziquantel was the most likely cause. Although the incidence of drug allergy in children is considered to be low,¹ the case illustrates that hypersensitivity to praziquantel may develop in children.

Because of the severity of the brain tissue swelling in this case, a combined therapy of praziquantel and corticosteroids was deemed necessary. We followed a conventional desensitization in an attempt to relieve the patient's sensitivity to praziquantel.² However, because of the concomitant administration of corticosteroids, it is unclear if true desensitization was ever achieved. Nevertheless, the favorable outcome in this patient suggests that our approach may be useful in treating such a patient.

REFERENCES

1. Mitchell AA, Lacouture PG, Sheehan JE, Kauffman RE, Shapiro S. Adverse drug reaction in children leading to hospital admission. *Pediatrics* 1988;82:24-9.
2. Sullivan TJ, Yecies LD, Shatz GS, Parker CW, Wedner HJ. Desensitization of patients allergic to penicillin using orally administered beta-lactam antibiotics. *J ALLERGY CLIN IMMUNOL* 1982;69:275-82.

From the Department of Pediatrics, University of Florida, Gainesville.

Reprint requests: Shih-Wen Huang, MD, Division of Allergy and Immunology, Department of Pediatrics, University of Florida College of Medicine, P.O. Box 100296, Gainesville, FL 32610-0296.

1/1/39902