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Possible treatment for rare polio-like illness shows no benefit

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Researchers have been searching for possible treatments for the polio-like illness causing paralysis in children, called acute flaccid myelitis. But a new study shows no signal of efficacy for one potential treatment, the antidepressant fluoxetine. The study is published in the November 9, 2018, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

Research suggests that the virus called enterovirus D68, or EV-D68, is one possible cause of acute flaccid myelitis. Lab tests showed that fluoxetine had antiviral effects against EV-D68, so the antidepressant was suggested by various experts as a possible treatment for acute flaccid myelitis, which can cause sudden muscle weakness in the arms, legs or neck, drooping eyelids and difficulty swallowing, speaking and breathing.

"The lack of an efficacy signal for the treatments for acute flaccid myelitis evaluated in this study emphasizes the need for development and prospective evaluation of more effective treatment and prevention strategies for this potentially devastating condition," said study author Kevin Messacar, MD, of Children's Hospital Colorado in Aurora.

For the retrospective study, researchers looked at the cases of 56 children with acute flaccid myelitis in 2015-2016 from 12 medical centers across the country. The children ranged in age from 2-1/2 to 9 years old.

The 28 children who received more than one dose of fluoxetine were compared to the 26 children who did not receive the drug and two who had only one dose and were considered part of the untreated group. The children's muscle strength in their arms and legs was recorded to determine whether the drug was effective.

At their first exams, there was no difference between the two groups in muscle strength. But by the end of the study an average of seven months later, the children who had taken the drug had lower strength scores than the children who did not receive treatment. After adjusting for factors that could affect the results, such as age, sex, other treatments the children received and their strength level at the first exam, the researchers found that on a scale of 0 to 20 that grades muscle strength throughout all four limbs, the strength scores of children who received the drug worsened by 0.2, while the scores of those who did not receive the drug improved by 2.5.

The researchers also looked at the strength score of the weakest limb in each child and found the difference in this score from initial examination to latest follow-up was worse for children who received the drug than those who did not.

The drug was well-tolerated by the children, with the number of side effects similar between those receiving the drug and those who did not.

A total of 91 percent of the children were sick before developing acute flaccid myelitis, with 71 percent having fever and 73 percent having respiratory symptoms. Weakness started an average of 8.5 days after the start of the illness.

More than 40 percent of the children had an enterovirus in their system, with 36 percent having EV-D68. A total of 57 percent of those who received the drug had EV-D68, compared to 14 percent of those who did

not receive the drug.

Messacar noted that the study has several inherent limitations in that it was looking back in time, patients were not chosen at random to receive the treatment or not and doctors and patients and their families were aware that they were receiving the drug. In addition, the small number of patients may make it difficult to draw definite conclusions.

Provided by American Academy of Neurology

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