Study finds nitric oxide does not help sickle cell pain crisis

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Inhaling nitric oxide gas does not reduce pain crises or shorten hospital stays in people living with sickle cell disease, according to the results of a new study sponsored by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health.

"Nitric Oxide for Inhalation in the Acute Treatment of Sickle Cell Pain Crisis," will be published in the March 2 issue of the Journal of the American Medical Association.

Sickle cell disease is an inherited disorder affecting between 70,000 and 100,000 Americans. The disease causes red blood cells, which are normally disc-shaped and pliable, to become misshapen, stiff and sticky. Severe pain crises occur periodically in people living with sickle cell disease when these sickled red blood cells hinder proper blood flow.

Nitric oxide dilates and expands blood vessels and enhances blood flow. Levels are lower in persons with sickle cell disease than in those without the disease. Previous trials with smaller numbers of patients had suggested that administration of nitric oxide might shorten sickle cell pain crises.

This study involved 150 sickle cell disease patients who were hospitalized for severe pain crises. Each participant was given nitric oxide gas or a placebo gas during treatment. Though the nitric oxide was well-tolerated, it failed to improve outcomes. The average length of pain crises among trial participants was 73 hours in the nitric oxide group compared with 65.5 hours in the placebo group, which was not statistically different. There was also no statistical difference between the two groups in average length of hospital stay or average painkiller usage.

More information: Learn more about this trial at: clinicaltrials.gov/ct2/show/NCT00094887

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