Monitoring Oxygen Levels of Premature Babies at Home and in the Clinic -- The RHO Trial

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What was the research about?

Babies who are born too early often have serious health problems, such as difficulty breathing. To help their lungs develop, these babies may need extra oxygen at home after they leave the hospital. This treatment is called home oxygen therapy.

In this study, the research team compared two ways to manage oxygen levels to help decide when it's time to decrease, and then finally stop, home oxygen therapy:

- Checking oxygen at monthly clinic visits
- Checking oxygen at monthly clinic visits and at home

What were the results?

Babies who had their oxygen checked at home safely stopped home oxygen therapy sooner than babies who had their oxygen checked only at monthly visits.

Parents' quality of life didn't differ between the two groups. Compared with the start of the study, parents in both groups reported higher quality of life three months after stopping home oxygen therapy.

Who was in the study?

The study included 197 babies who received home oxygen therapy and their parents. All babies received care at one of nine hospitals across the United States. Of the babies, 59 percent were white, 13 percent were black, 3 percent were Asian, and 25 percent were another race; 9 percent were Hispanic. Also, 63

percent were boys. On average, the babies weighed about 2 pounds when they were born, and their mothers were 27 weeks pregnant when they gave birth.

What did the research team do?

The research team assigned babies and their parents by chance to one of two groups. In one group, clinic staff tested the babies every month during visits to see if they should receive more, less, or the same amount of oxygen. Babies took part in a sleep study, where doctors watch babies' oxygen levels overnight in the clinic, to see if they were ready to stop receiving oxygen.

Babies in the second group also visited the clinic monthly for testing. In addition, parents in this group checked their babies' oxygen levels at home. For up to a week, parents checked oxygen levels as often as possible during the day and all night. Parents then sent oxygen data to the research team. Clinic staff used the data between visits to decide on changes or on stopping home oxygen therapy.

Parents filled out surveys about their quality of life at each clinic visit and three months after home oxygen therapy ended.

Doctors, parents of babies who were born too early, and people who worked for health insurance and medical equipment companies helped with the study.

What were the limits of the study?

Some parents in each group reduced or stopped home oxygen therapy without checking with the research team or their baby's doctors, which may have changed the study's results.

Future studies could explore ways to encourage parents to talk to doctors before stopping home

oxygen therapy. Studies could also create oxygen level guides about managing home oxygen therapy.

How can people use the results?

Clinics, doctors, and parents can use the results when considering how to manage home oxygen therapy.

To learn more about this project, visit www.pcori.org/Rhein279.