



Who Sponsored this study?
GlaxoSmithKline

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A STUDY THAT ASSESSED AN ORAL ROTAVIRUS VACCINE IN BABIES






This document provides a short summary of this study for a general audience. You can find more information in scientific summaries of the study. Links to those summaries are provided at the end of this document.

Overview

Why was this study conducted?

This study was done to assess GSK's rotavirus vaccine without porcine circovirus 1 fragments (PCV-1). The study compared different production batches of the PCV-free vaccine, and compared the PCV-free vaccine to the currently used vaccine.

What was studied?

- Body's defenses (called **antibodies**) against rotavirus
- Possible side effects

Who was in this study?

786 baby boys and 814 baby girls took part in the study. They were 6 to 12 weeks old when they started the study.

What kind of study was it?

- Assessing lot-2-lot consistency: the researchers compared different production batches (lots) of the PCV-free vaccine.
- Controlled: the researchers compared the PCV-free vaccine to the currently available one.
- Randomized: assignment to vaccination groups was decided by chance (like tossing a coin).
- Observer-blind: neither the babies' parents or guardians nor the medical staff responsible for evaluation of the study results knew which vaccine the babies got.

Main results

- There were no meaningful differences between the levels of rotavirus antibodies in babies, regardless of:
  - which batch of the PCV-free rotavirus vaccine they received
  - whether they received the PCV-free vaccine or the currently used vaccine
- The side effects reported in this study were known side effects of the currently used rotavirus vaccine. The results did not raise any new safety concerns.

NCT number: NCT02914184
EudraCT number: 2016-000598-19

General information about the research study

When was the study done?

The study started in October 2016 and ended in November 2018.

Why was this study done?

Rotavirus is the most common cause of severe diarrhea in babies and young children. Vaccines can help protect them against rotavirus. They help the body make defenses called **antibodies** against the virus.

GSK's rotavirus vaccine is available for use in many countries. Some years ago, researchers found low amounts of fragments of porcine circovirus 1 (PCV-1), an animal virus, in the GSK vaccine. Although health authorities decided that PCV-1 was not a threat to public health and to vaccinated babies and children, GSK decided to develop a PCV-free rotavirus vaccine.

The main goals of the study were:

- To compare the levels of rotavirus antibodies in babies who got 3 different production batches of the PCV-free rotavirus vaccine.
- To compare the levels of antibodies against the rotavirus, in babies who got the PCV-free rotavirus vaccine and in babies who got the currently used rotavirus vaccine.

Who took part in this study?

1600 babies from 8 countries were vaccinated – 786 boys (49%) and 814 girls (51%)

They were 6 to 12 weeks old when they started the study

Babies could take part in the study if they:

- ✓ Were healthy
- ✓ Were born full-term (after 37 to 42 weeks of pregnancy)

Babies could not take part in the study if they:

- ✓ Already received a rotavirus vaccine
- ✓ Previously got sick from rotavirus infection

Which vaccines were studied?

Two GSK rotavirus vaccines were used in this study:

- **PCV-free rotavirus vaccine** (without the PCV-1 fragments)
- **Currently used rotavirus vaccine** (containing small amounts of PCV-1 fragments)

How was the study done?

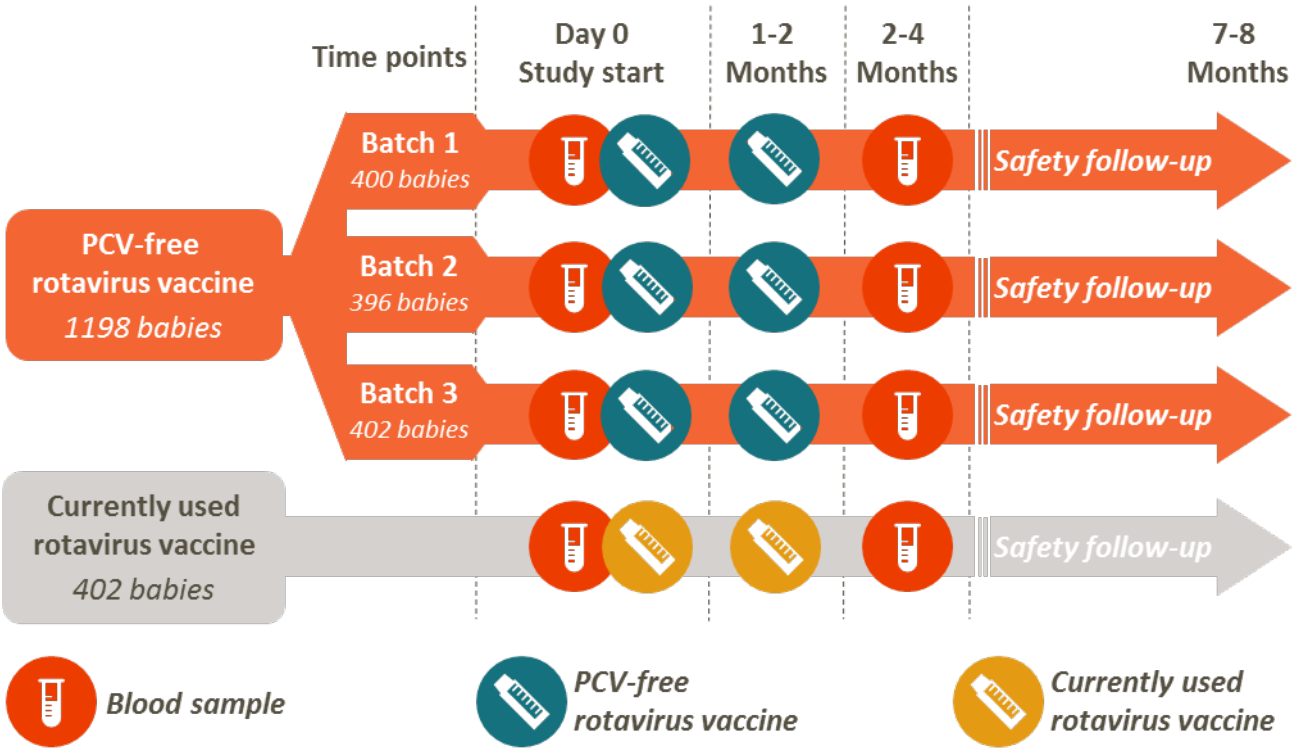
Babies were divided into 4 study groups (Figure 1) and received two oral doses of:

- PCV-free rotavirus vaccine - Batch 1
- PCV-free rotavirus vaccine - Batch 2
- PCV-free rotavirus vaccine - Batch 3
- Currently used rotavirus vaccine

Blood samples were taken before the first dose and 1 to 2 months after the second dose. These samples were used to determine the levels of antibodies against the rotavirus.

The babies were observed for 6 months after the second dose for potential side effects (this was called safety follow-up).

Figure 1: Study design overview



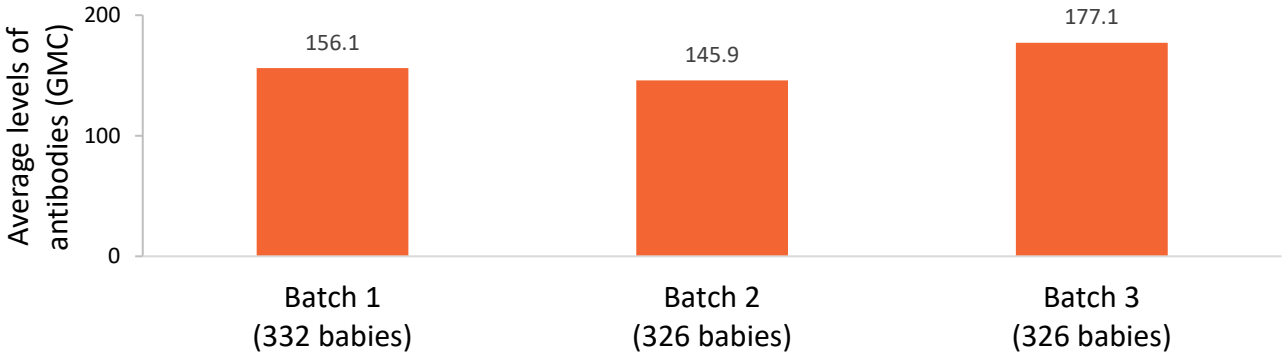
What were the main results of the study?

This report focuses on the results of the main goals of the study. All results may be found in the clinical results summary.

Antibodies after different batches of the PCV-free vaccine

There were no meaningful differences in the levels of antibodies in babies regardless of which of the three production batches they received (Figure 2). These results indicate that the manufacturing process produced consistent vaccine doses across production batches.

Figure 2 Antibody levels after different batches of the PCV-free rotavirus vaccine



Geometric mean concentration (GMC) is a measure of the average level of antibodies in blood.
Note: the number of babies in each group is not the same as the number of babies who received the vaccine (Figure 1). This is because only babies who had no antibodies before vaccination and who followed all relevant study procedures as planned were included.

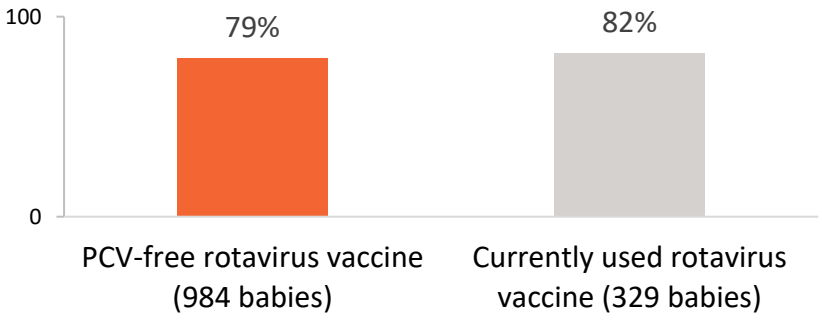
Antibody levels after the PCV-free rotavirus vaccine and after the currently used rotavirus vaccine

Two measurements were done to compare the PCV-free rotavirus vaccine and the currently used rotavirus vaccine. Researchers looked at:

- The percentage of babies who developed antibodies against rotavirus after the second vaccine dose and did not have them before vaccination (Figure 3).
- The levels of antibodies after 2 vaccine doses (Figure 4).

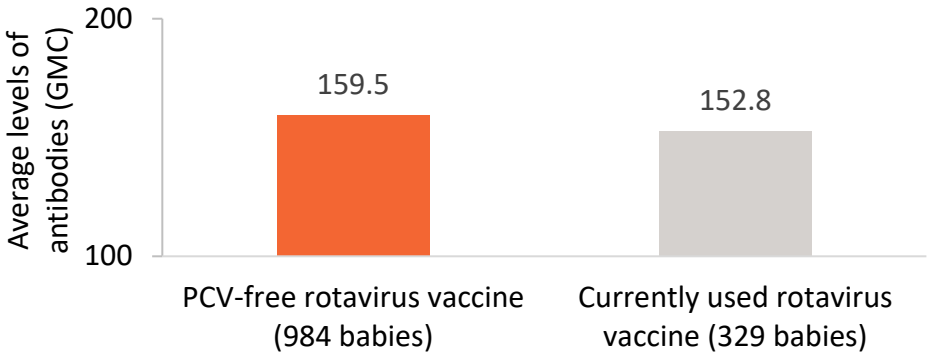
In both cases, there was no meaningful difference between babies who got the PCV-free rotavirus vaccine and those who got the currently used rotavirus vaccine. These results indicate that both vaccines offer equivalent protection against rotavirus.

Figure 3 Percentage of babies who developed antibodies against rotavirus after vaccination



Geometric mean concentration (GMC) is a measure of the average level of antibodies in blood.
Note: the number of babies in each group is not the same as the number of babies who received the vaccine (Figure 1). This is because only babies who had no antibodies before vaccination and who followed all relevant study procedures as planned were included.

Figure 4 Antibody levels after vaccination



Geometric mean concentration (GMC) is a measure of the average level of antibodies in blood.
Note: the number of babies in each group is not the same as the number of babies who received the vaccine (Figure 1). This is because only babies who had no antibodies before vaccination and who followed all relevant study procedures as planned were included.

What were the side effects?

Unwanted medical events (adverse events) can happen to people when they receive a vaccine. Study doctors record all these events. A summary of all events reported in this study may be found in the ***clinical results summary***.

If the study doctor thinks that the event was caused by the vaccine, they record this as a possible side effect (adverse reaction).

In this summary, "side effects*" refer to those events that the study doctor thinks may have been caused by the study vaccine.

The side effects reported in this study were the known side effects of rotavirus vaccine. Irritability or fussiness was the most often reported side effect for both vaccine formulations (Table 1).

The results from this study did not raise any safety concerns for the PCV-free rotavirus vaccine.

Table 1 Side effects observed in more than 1% of babies

Side effect	PCV-free rotavirus vaccine	Currently used rotavirus vaccine
Irritability/fussiness	491 of 1198 (41.0%)	162 of 402 (40.3%)
Loss of appetite	225 of 1198 (18.8%)	85 of 402 (21.1%)
Cough/runny nose	166 of 1198 (13.9%)	59 of 402 (14.7%)
Vomiting	98 of 1198 (8.2%)	30 of 402 (7.5%)
Fever (38°C and above)	72 of 1198 (6.0%)	31 of 402 (7.7%)
Diarrhoea (between day 1 and 8)	45 of 1198 (3.8%)	12 of 402 (3.0%)
Diarrhoea (between day 8 and 31)	34 of 1198 (2.8%)	12 of 402 (3.0%)

**The use of the term side effects in this summary may be different to that in the Informed Consent or other documents related to the vaccine.*

How has this study helped patients and researchers?

The results from this study indicate that:

- The new manufacturing process produces consistent PCV-free rotavirus vaccine doses across production batches.
- The PCV-free rotavirus vaccine and the currently used rotavirus vaccine both help protect babies against rotavirus.

The results from this study will be submitted to regulatory agencies for evaluation and, if approved, will enable health care professionals to administer the PCV-free rotavirus vaccine to babies.

Are there plans for further studies?

There are other studies to further evaluate the GSK rotavirus vaccine. The results of future studies will be available on the websites of the European Medicines Agency and/or the United States National Institutes of Health (see links at the end of this document).

Where can I find more information about this study?

The detailed title for this research study is:

A phase IIIA, randomised, observer-blind, multi-centre study to evaluate the clinical consistency of 3 production lots of the *Porcine circovirus* (PCV)-free liquid formulation of GlaxoSmithKline Biologicals (GSK) oral live attenuated human rotavirus (HRV) vaccine and to evaluate the PCV-free liquid formulation of GSK's HRV vaccine as compared to the currently licensed lyophilised formulation of the HRV vaccine in terms of immunogenicity, reactogenicity and safety when administered as a 2-dose vaccination in healthy infants starting at age 6-12 weeks.

Clinical studies have unique study numbers. Below are the unique study numbers associated with this study.

Organization	Website	Study Number
European Medicines Agency	www.clinicaltrialsregister.eu	2016-000598-19
United States National Institutes of Health (NIH)	www.clinicaltrials.gov	NCT02914184

Your doctor can help you understand more about this study and the results. You should not make changes to your care based on the results of this or any single study.

This document was developed and approved by GSK on 24 April 2019. The information in this summary does not include additional information available after this date.

For readers of this document in text form, the websites associated with the hyperlinks above are:

EudraCT summary:
https://www.clinicaltrialsregister.eu/ctr-search/search?query=115461
US NIH/clinicaltrials.gov:
https://clinicaltrials.gov/ct2/show/NCT02914184?term=115461&rank=1