

For years, pregnant women have been among the most vulnerable to Ebola virus disease, with infection often leading to death or the loss of nearly all pregnancies. Now, a groundbreaking Rwandan study offers hope: a two-dose Ebola vaccine regimen has been shown to be safe for both mothers and their newborns.

The trial, carried out at Gisenyi and Gihundwe District Hospitals in Rwanda's Western Province, involved 2,013 healthy women aged 18 and older. Participants were randomly assigned to receive the vaccines either during pregnancy or after giving birth. The regimen used—Ad26.ZEBOV followed by MVA-BN-Filo 56 days later—is a nonreplicating vaccine developed by Janssen Vaccines & Prevention BV, part of Johnson & Johnson.

The results were reassuring. Only 5.2% of vaccinated pregnant women experienced complications, compared with 7.3% in women vaccinated postpartum. Preterm labor was the most common maternal issue, occurring in roughly 3% of cases in both groups. Among infants, 26% of those born to vaccinated mothers had adverse outcomes, similar to 25.6% in the control group. Most of these cases were “small for gestational age,” and neonatal deaths were low and comparable between groups.

Equally important, the vaccine triggered a strong immune response. Over 90% of women maintained antibodies against Ebola one year after the first dose. Antibodies were also found in cord blood and in infants at 14 weeks, demonstrating that mothers could pass protection to their babies.

“Pregnant women face the highest risk of death from Ebola, and until now, we had no clear evidence on vaccine safety for them,” said Dr. Jeanette Uwimana, lead investigator. “This study shows the vaccine is well-tolerated, safe, and capable of protecting both mothers and infants.”

The trial's design included careful monitoring of mothers and infants for 14 weeks postpartum to ensure any safety concerns were detected. Serious adverse events were rare and largely unrelated to vaccination.

Experts say these findings could transform Ebola vaccination strategies in affected regions. While the Merck Ervebo vaccine has been used during outbreaks, it is a live-replicating vaccine and carries potential risks for pregnant women. The Janssen two-dose regimen, being nonreplicating, provides a safer alternative, especially outside outbreak hotspots or for women not yet exposed to the virus.

The study also showed that vaccinating women during the third trimester led to higher antibody levels, suggesting that later pregnancy vaccination may maximize the transfer of immunity to the infant.

As Ebola continues to threaten communities across Central and West Africa, this research marks a significant step forward. Pregnant women, once considered too vulnerable for vaccination, may soon have access to protection that could save both their lives and those of their babies.