Safety and Efficacy of DTG vs EFV and TDF vs TAF in Pregnancy: IMPAACT 2010 TRIAL

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IMPAACT International Maternal Pediatric Adolescent AIDS Clinical Trials Network

Materials from CROI 2020 Presentation

- CROI abstract: https://www.croiconference.org/sessions/safety-and-efficacy-dtg-vs-efv-and-tdf-vs-taf-pregnancy-impaact-2010-trial
- CROI presentation (not yet available on CROI website): https://impaactnetwork.org/publications/CROI2020.html
- NIAID news release: https://www.niaid.nih.gov/news-events/newer-anti-hiv-drugs-safest-most-effective-during-pregnancy

Background and Rationale

- WHO now recommends dolutegravir (DTG)-based antiretroviral treatment (ART) globally
- Countries are transitioning from efavirenz (EFV)- to DTG-based first-line ART
  - Tenofovir alafenamide fumarate (TAF) is a recommended first-line agent for adults in the US
- ***It is essential to obtain pregnancy safety and efficacy data for agents that are expected to be widely used by women during pregnancy, such as DTG and TAF***

643 mothers and their babies were enrolled in about 1 year.

Pregnant women were randomly assigned, in pairs with their babies, to one of three groups.

EFV/TDF/FTC	DTG + TDF/FTC	DTG + TAF/FTC
Efavirenz / Tenofovir disoproxil fumarate / Emtricitabine	Dolutegravir + Tenofovir disoproxil fumarate / Emtricitabine	Dolutegravir + Tenofovir alafenamide / Emtricitabine

VESTED Study Drug Regimens

EFV/FTC/TDF

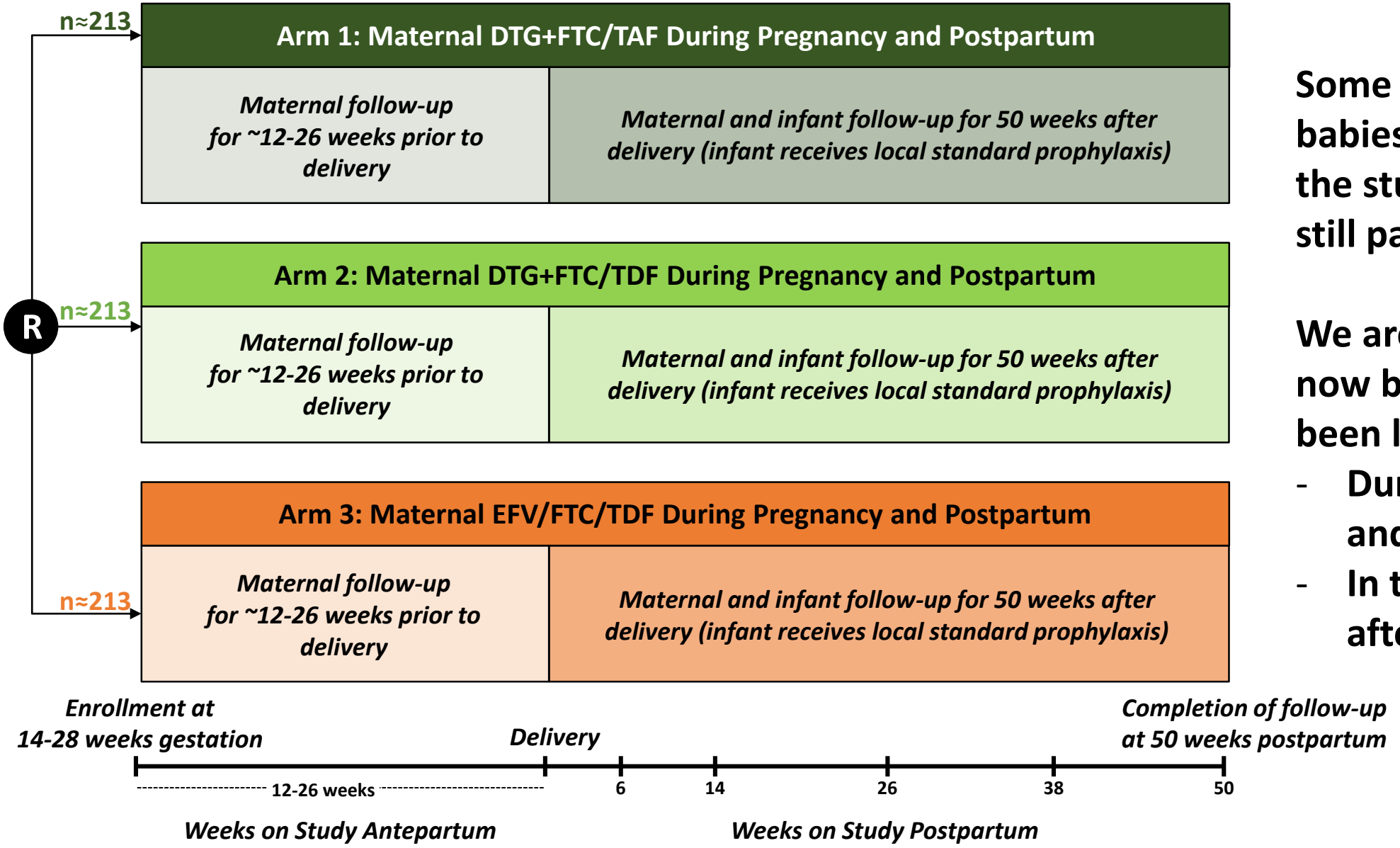
DTG+FTC/TDF

DTG+FTC/TAF

Final Enrolling VESTED Sites

Botswana (2): *Gaborone; Molepolole*
Brazil (4): *Inst de Puericultura e Pediatria Martagao Gesteira; Hosp Fed dos Servidores do Estado; SOM Fed Univ Minas Gerais; Hosp Geral de Nova Iguacu*
India (1): *BJMC*
South Africa (4): *Umlazi; FAMCRU; Soweto; Wits RHI Shandukani*
Tanzania (1): *KCMC*
Thailand (3): *Siriraj; Chiang Rai; Chiang Mai Univ*
Uganda (2): *MUJHU; Baylor-Uganda*
United States (2): *Univ Miami; Univ Fl Jacksonville*
Zimbabwe (3): *St. Mary's; Seke North; Harare Family Care*

IMPAACT 2010 Study Design



Some mothers and babies have finished the study. Others are still participating.

We are sharing results now based on what has been learned:

- **During pregnancy and at delivery**
- **In the first month after babies are born**

The combination of ARVs with DTG were more effective than the combination with EFV at controlling HIV in pregnant.

ARV Combination with **EFV**

EFV/TDF/FTC

91%

of mothers

Low viral load

ARV Combination with **DTG**

DTG+TDF/FTC or DTG+TAF/FTC

98%

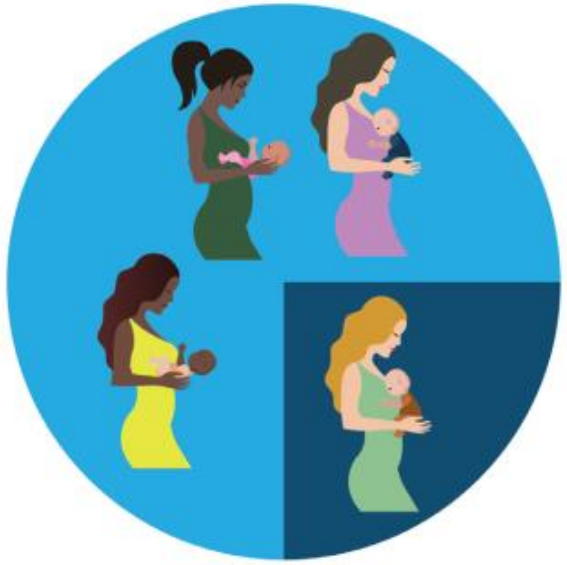
of mothers

Low viral load

This was learned by comparing the number of mothers in each group who had a low HIV viral load at delivery.

The combination of ARVs with DTG and TAF had the best pregnancy outcomes.

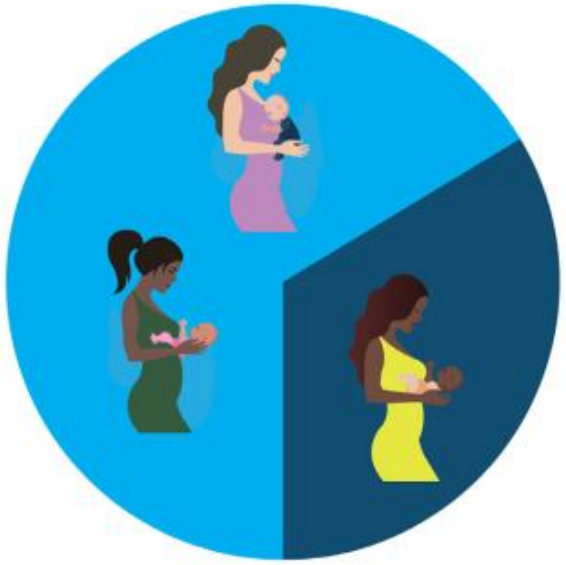
DTG + TAF/FTC



About **1 in 4 (24%)** bad pregnancy outcomes

DTG + TDF/FTC

EFV/TDF/FTC



About **1 in 3 (33%)** bad pregnancy outcomes

This was learned by comparing the number of mothers in each group who had a bad pregnancy outcome.

Some examples of bad pregnancy outcomes are having a baby early, having a baby that is very small, or having a baby die while in the womb.

Additional Results

- Two babies were found to have HIV within the first 14 days of life. These babies were born to mothers who received ARVs with DTG.
- No babies had neural tube defects.

More to Come!

- These results are only the first part of what we hope to learn from IMPAACT 2010 (VESTED).
- The study is continuing to look at the combinations of ARVs in mothers and babies as planned.

Conclusions

- **The study showed that all three combinations of ARVs were safe in pregnancy.** The combinations also controlled the amount of HIV in mothers' blood well in pregnancy.
  - The combinations of ARVs with DTG were more effective than the combination with EFV at controlling HIV in pregnancy.
  - The combination of ARVs with DTG and TAF had the best pregnancy outcomes.
- **Results affirm the WHO recommendation to use DTG in all populations, including pregnant women and people of childbearing potential.**

Acknowledgements

The IMPAACT 2010/VESTED Protocol Team gratefully acknowledges the dedication and commitment of the 643 mother-infant pairs, their communities, and CAB representatives, without whom this study would not have been possible.

Sponsors:
US National Institutes of Health (Patrick Jean-Philippe, Renee Browning, Lynette Purdue, Nahida Chakhtoura)
Gilead Sciences, Mylan, ViiV Healthcare Ltd

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Community: Nagawa Jaliaah, Cheryl Blanchette

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Botswana: *Gaborone and Molepolole:* Gaerolwe Masheto
Brazil: *Inst de Puericultura e Pediatria Martagao Gesteira:* Elizabeth Machado; *Hosp Fed dos Servidores do Estado:* Esaú João; *SOM Fed Univ Minas Gerais:* Jorge Pinto; *Hosp Geral de Nova Iguacu:* Jose Pilotto
India: *BJMC*: Pradeep Sambarey
South Africa: *Umlazi*: Sherika Hanley; *FAMCRU:* Gerhard Theron; *Soweto*: Haseena Cassim; *Wits RHI Shandukani*: Lee Fairlie
Tanzania: *KCMC*: James Ngocho
Thailand: *Siriraj:* Kulkanya Chokephaibulkit; *Chiang Rai:* Jullapong Achalapong; *Chiang Mai Univ:* Linda Aurpibul
Uganda: *MUJHU*: Deo Wabwire; *Baylor-Uganda:* Violet Korutaro
United States: *Univ Miami:* Gwendolyn Scott; *Univ Fl Jacksonville:* Mobeen Rathore
Zimbabwe: *St. Mary's:* Patricia Mandima; *Seke North:* Lynda Stranix-Chibanda; *Harare Family Care*: Tichaona Vhembo

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Acknowledgements

IMPAACT 2010/VESTED is funded by the US National Institutes of Health (NIH).

Overall support for the International Maternal Pediatric Adolescent AIDS Clinical Trials Network (IMPAACT) was provided by the National Institute of Allergy and Infectious Diseases (NIAID) with co-funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the National Institute of Mental Health (NIMH), all components of the National Institutes of Health (NIH), under Award Numbers UM1AI068632 (IMPAACT LOC), UM1AI068616 (IMPAACT SDMC) and UM1AI106716 (IMPAACT LC), and by NICHD contract number HHSN275201800001I.

The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

The study products were provided by ViiV Healthcare Ltd, Gilead Sciences, Mylan.