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Risk Assessment in a Global CVD Prevention Cohort of People with HIV by PCE, PREVENT, and SCORE2

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Background

The Randomized Trial to Prevent Vascular Events in HIV (REPRIEVE) trial led to changes in multiple clinical guidelines advising about statin medication for people with HIV (PWH). US guidelines use the Pooled Cohort Equations (PCE) to calculate patients' cardiovascular risk scores but may in the future use the newer PREVENT risk score method. European guidelines use a method called SCORE2 to calculate cardiovascular risk.

The risk of heart disease is increased approximately 2 times among PWH, as compared to people without HIV. Accurately estimating the risk of heart disease is important for appropriately advising about useful heart disease prevention strategies, including statin therapy.

Goals of the Study

The goal of this study was to compare the effects of using PCE versus PREVENT to calculate cardiovascular risk among PWH according to US guidelines, or SCORE2 according to EU guidelines.

REPRIEVE enrolled PWH between ages 40-75 with low-to-moderate traditional heart disease risk, randomized these participants to a statin medication called pitavastatin or to placebo (a pill that contains no medication), and followed these participants for, on average, 5 years, to see if they developed heart disease events like a heart attack or stroke. Main findings from REPRIEVE were that [statin therapy reduced heart disease events among PWH by 36%](#), prompting guideline changes recommending statin use in PWH.

➤ The participants:

- 7,757 REPRIEVE participants with data for PREVENT and SCORE2 calculation (3,875 taking placebo and 3,882 taking pitavastatin)
 - Low-to-moderate traditional heart disease risk
 - Median age at enrollment: 50 years
 - 2,413 (31%) women and 5,344 (69%) men

➤ The findings:

- The 10-year cardiovascular risk score estimates were highest when calculated via PCE score, in the middle with SCORE2, and lowest with PREVENT.
- The median difference in predicted risk between PCE and PREVENT was -2.1%.
- The median difference in predicted risk between PCE and SCORE2 was -0.9%.
- Using PREVENT- (versus PCE-) based scoring reclassified 38% of participants from a higher risk group to a lower risk group ($\geq 5\%$ reclassified to $<5\%$).
- Using SCORE2- (versus PCE-) based scoring reclassified 27% of participants from a higher risk group to a lower risk group ($\geq 5\%$ reclassified to $<5\%$) among patients aged 50+.
- By reclassifying participants below US guideline threshold 5%, PREVENT (versus PCE) could reduce the number of PWH receiving statin therapy, which resulted in a higher estimated incidence of cardiovascular events in a hypothetical model.

REPRIEVE Trial Website: reprievetrial.org

The findings shared in this summary are from the REPRIEVE population at a specific point in time. These findings are descriptive and not intended to change clinical care. If you have questions about what you've read, please talk to members of the REPRIEVE study team at your local site or a health care provider



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In Summary: Among participants in the REPRIEVE cohort of PWH, we identified differences in cardiovascular risk estimation between the PCE, PREVENT, and SCORE2 methods. Guidelines for statin prescription for PWH based on REPRIEVE should account for the differences in cardiovascular risk estimates when scores other than PCE are used.

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