Media Release

Embargoed by *The Lancet* until Sunday, Aug. 29, 2021, at 4:30 a.m. EDT

Study shows combo therapy cuts risk of heart attacks and stroke in half

Cape Heart Institute (Aug. 29, 2021) – A combination therapy of aspirin, statins and at least two blood pressure medications given in fixed doses can slash the risk of fatal cardiovascular disease (CVD) by more than half, says an international study involving researchers of the Cape Heart Institute, University of Cape Town, South Africa

The fixed-dose combination (FDC) therapies were examined both with and without aspirin versus control groups in a combined analysis of more than 18,000 patients without prior CVD from three large clinical trials. FDCs including aspirin cut the risk of heart attacks by 53 per cent, stroke by 51 per cent, and deaths from cardiovascular causes by about 49 per cent.

“This study is based on research spanning over 2 decades and is going to have impact worldwide,” said Prof. Karen Sliwa, Director of the Cape Heart Institute, University of Cape Town. Name Name, Title, Institution, and a study author.
The researchers report approximately 19 million people worldwide die of CVD and twice as many experience heart attacks or strokes every year. About 80 per cent of cardiovascular events occur in individuals without a prior history of such illness, meaning effective preventative strategies including medications in people without CVD is essential if we are to prevent the majority of heart attacks, strokes and related deaths in the world.

“This combination, either given separately or combined as a polypill, substantially reduces fatal and non-fatal CVD events,” said lead author Phil Joseph, associate professor of medicine at McMaster University and a cardiologist for Hamilton Health Sciences in Hamilton, Canada.

“The largest effects are seen with treatments that include blood pressure lowering agents, a statin and aspirin together, which can reduce fatal and non-fatal cardiovascular events by about half.

“The benefits of fixed-dose combination therapy are consistent at different blood pressure levels, cholesterol levels and with or without diabetes, but larger benefits may occur in older populations.”

Joseph is the lead author of the meta-analysis study by the Population Health Research Institute (PHRI) of McMaster University and Hamilton Health Sciences, with more than 18 investigators from 13 countries, which was led by Professor Salim Yusuf, Executive Director of PHRI and Distinguished Professor at McMaster. The study included participants from 26 countries and every inhabited continent of the world.

The Cape Heart Institute, University of Cape Townwas actively involved in the study.

Today the study was published by *The Lancet*, and concurrently presented to the European Society of Cardiology Congress by Joseph.

FDC treatment strategies trialed by the researchers were previously thought to substantially reduce CVD events and are called ‘polypills’ when used in a single-tablet drug formula.

The concept of a combination pill was first proposed almost 20 years ago as a strategy to substantially reduce CVD in both secondary prevention and at the population level.

Early trials demonstrated improved patient adherence to treatment regimens and better risk control with a strategy including the inexpensive and safe polypill, compared to the use of single drugs, usual care, or placebos.

“These results are huge, and its wide use can avoid between 5 and 10 million individuals experiencing a stroke, heart attack or dying from these conditions yearly. I could see a future with development of a stronger polypill where we could see a lowering of cardiovascular disease by 70 per cent around the world and leading to even greater benefits,” said Salim Yusuf. “Given that all the components of the polypill are generic and low cost, polypills can be provided to participants at modest costs and are likely to be very cost effective.”

Researchers gleaned their findings from combining data from three big studies on a total of 18,000 people followed for about five years – these included the International Polycap Study (TIPS)-3, the Heart Outcomes Prevention Evaluation (HOPE)-3 study and the PolyIran trial.

Several international experts praised the study.

“The World Heart Federation (WHF) is committed to promoting cardiovascular health for everyone by reducing the CVD burden worldwide, in both developed and developing countries,” said WHF president Fausto Pinto.

“The demonstration of a low-cost approach using fixed dose combinations to reduce CVD by about 50 per cent is extraordinary and represents a huge opportunity to tackle the condition globally, with a major potential impact on people's lives. The WHF has supported the use of a polypill for the last decade and these results provide robust evidence to strengthen our global advocacy strategy.”

Wellcome Trust Director Sir Jeremy Farrar said, “The Wellcome Trust supported one of the three major studies that are included in the analysis, based on the recommendations that emanated from a workshop convened with the World Health Organization in London in August 2001. The Wellcome Trust has been committed to evaluating low-cost widely applicable solutions for common diseases including cardiovascular disease. We are pleased that our support has contributed to the development of robust evidence indicating that the polypill or fixed dose combinations involving blood pressure lowering, statins and aspirin can reduce CVD substantially.”
The PHRI funded the study.

About the Population Health Research Institute
The Population Health Research Institute is a Joint Institute of McMaster University and Hamilton Health Sciences. Its 350 researchers and expert staff coordinate large studies in 102 countries in all inhabited continents of the world and have included more than a million people. Discoveries by its scientists have contributed to better preventive and treatment strategies that are globally applicable. For more information, visit phri.ca.

Editors:
Pictures of Salim Yusuf and Philip Joseph may be found at https://macdrive.mcmaster.ca/d/24c53814ee3649d3bbd3/

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