'Big data' provides clues about medication compliance post heart attack

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People who have been treated with cholesterol- or blood pressure-lowering medications before a heart attack were nearly ten times more likely to still be taking them as prescribed 12 months after their heart

attack, new research shows.

To try to understand factors associated with taking protective medications, a team of Sydney researchers studied medication use in 14,200 people who were hospitalized for a first heart attack.

They found less than one third were still taking these medications a year later even though they've been proven to reduce the chance of a repeat heart attack.

Lead author, Dr. Anna Campain, biostatistician at the George Institute and conjoint lecturer in the Faculty of Medicine at UNSW Sydney, said the results suggest that paying attention to what medications a patient was taking—or not taking—before the heart attack might be key to supporting their medication after the event.

"Prior use of medication before the heart attack should be a key consideration when counseling patients before they are discharged from hospital," she said. "Specialists, pharmacists and GPs should focus more on supporting patients who are taking these medications for the first time."

Cardiovascular disease (CVD) is the leading cause of death globally, despite considerable advances in effective preventive treatments. Heart attacks—or acute myocardial infarctions (AMIs) - account for almost half of these deaths. Having one heart attack greatly increases the risk of having another, but this risk can be reduced by as much as 50% with the correct treatment and management.

"Previous research on adherence to protective medications has tended to focus on the time of the heart attack itself," commented senior author and study instigator, Professor Meg Jardine, of the NHMRC Clinical Trials Centre at The University of Sydney. "We were able to take a

much broader view in this research by drawing on information before, during and after the time of a first heart attack."

"Our findings suggest previous experience with these medications may be highly influential in identifying which patients are more likely to take recommended tablets," she added.

"A heart attack is a traumatic and life-changing event, but it may be only one factor in driving behavior change," commented co-senior author, Professor David Peiris of The George Institute.

Despite a wealth of evidence in all international treatment guidelines that recommend patients who have had an AMI take long-term medications to prevent a second heart attack, many don't end up sticking to it.

"There may be lots of different reasons why people don't adhere to their medications after a heart attack. This research has highlighted that previous exposure is a very important," said Dr. Carinna Hockham, EXTEND45 study director and epidemiologist at The George Institute.

The EXTEND45 collaboration includes The Sax Institute, community pathology companies and an expert team of Sydney researchers and clinicians. "None of this research would be possible without the 45 and Up Study participants," added Dr. Hockham. "Their generosity has led to many new understandings of health and health care in contemporary Australia."

The researchers used data from the 45 and Up Study—an Australian population-based cohort study of 267,153 men and women aged 45 years or over who were randomly sampled from the general population of New South Wales.

They identified 14,200 participants who had their first AMI between

2006 and 2014 and who were still alive after 12 months, through linkage to routinely collected clinical and prescription medication claims data, to study adherence over time.

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