Optimal strategies for monitoring lipid levels in patients at risk or with cardiovascular disease: a systematic review with statistical and cost-effectiveness modelling

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Declared competing interests of authors: none

Published December 2015
DOI: 10.3310/hta191000

Plain English summary

Monitoring lipid levels in patients with CVD

Health Technology Assessment 2015; Vol. 19: No. 100
DOI: 10.3310/hta191000

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There is a clear relationship between cholesterol levels and the risk of heart disease (including heart attack and stroke). It is common that, together with other factors such as blood pressure, cholesterol levels are measured at regular intervals to determine a person's risk of heart disease and hence decide whether or not cholesterol-lowering drugs (statins) should be prescribed. There are several alternative cholesterol measures ('lipids'). Over short time periods, cholesterol measures may vary more by chance than by any real change in health status. Therefore, we studied which cholesterol measures are most strongly associated with future heart disease, and the appropriate length of time to leave between one cholesterol test and the next.

First, we compiled information from previous studies and found that, in general, combinations of cholesterol measures (e.g. the ratio of two types of cholesterol) show stronger associations with heart disease than single measures. We used similar methods to study the effects of statins on cholesterol. This confirmed that effects are greater at higher doses. Finally, we used computer models based on routine general practice data to estimate the levels of treatment, financial costs and rates of outcomes such as heart disease, if cholesterol is measured every 1, 2, 3 or 5 years. Based on our models, the shorter the interval, the larger the number of people that will be eligible for treatment.

Within limitations, including the difficulty of fully quantifying harms and benefits of statins in a computer model, we estimate that this is both beneficial and cost-saving.

Health Technology Assessment

HTA/HTA TAR

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 5.116

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, The Cochrane Library and the ISI Science Citation Index.

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

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This report

The research reported in this issue of the journal was funded by the HTA programme as project number 10/97/01. The contractual start date was in January 2012. The draft report began editorial review in April 2014 and was accepted for publication in December 2014. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health.

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