Oral anticoagulants for primary prevention, treatment and secondary prevention of venous thromboembolic disease, and for prevention of stroke in atrial fibrillation: systematic review, network meta-analysis and cost-effectiveness analysis

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Declared competing interests of authors: Jonathan AC Sterne was a National Institute for Health Research (NIHR) Health Technology Assessment Clinical Trial Board member from 2010 to 2014 and is a NIHR Senior Investigator (award NF-SI-0611-10168). Chris Salisbury is a NIHR Health Services and Delivery Research Board member, and also reports receipt of a research grant from NIHR. Howard HZ Thom reports personal fees for consultancy work from Novartis Pharma, Eli Lilly and company, and ICON Plc, all outside this work. Sofia Dias reports grants from NIHR, Novartis and Pfizer, all outside this work. Diane Eaton reports other from Boehringer Ingelheim, Pfizer, Bayer, Leo Pharmaceuticals and Bristol-Myers Squib, outside the submitted work, and AntiCoagulation Europe (ACE), a registered charity, the aims of which include raising awareness of the risk and prevention of thrombosis, and providing information, education and support to people who are on anticoagulation therapy for any duration, including long term for those with chronic conditions. Diane Eaton works with ACE in an associate consultant capacity in the role of Project Development Manager. She has over 40 years of personal experience of anticoagulation therapy and represents ACE as a patient expert at the National Institute for Health and Care Excellence (NICE). On behalf of the charity, she has provided the patient perspective for the submissions for the technology appraisals for the novel oral anticoagulants (NOACs) and Diagnostic Guidance for Coagulometers over a 4-year period. Please note that the financial information has been prepared by Eve Knight, Chief Executive of AntiCoagulation Europe, for the purpose of inclusion in this document.

Published March 2017
DOI: 10.3310/hta21090

Plain English summary
Oral anticoagulants for venous thromboembolic disease and stroke
Health Technology Assessment 2017; Vol. 21: No. 9
DOI: 10.3310/hta21090
NIHR Journals Library www.journalslibrary.nihr.ac.uk
Plain English summary

Blood clots, which can occur in both arteries and veins, sometimes break loose and move to other organs where they cause serious health problems. Venous thromboembolism (VTE) includes clots in deep veins of the legs or pelvis, and their displacement to the artery from the heart to the lungs. Atrial fibrillation (AF) is a form of irregular heartbeat that is associated with an increased risk of stroke. The UK NHS tries to reduce these problems in high-risk patients through anticoagulant drugs, which lower the risk of blood clots but increase the risk of bleeding. New oral anticoagulant drugs (NOACs) offer potential advantages compared with warfarin and low-molecular-weight heparin (LMWH), the current standard treatments. They cost more, but this might be offset by reduced need for anticoagulation services, better effectiveness or improved safety. We compared the clinical effectiveness and cost-effectiveness of these treatments in people with AF, and people with, or at risk of, VTE. We searched for relevant randomised trials, and compared all of the treatments that had been evaluated. One of the NOACs, apixaban, was among the best treatments for stroke prevention in AF, and was the most cost-effective. We found little evidence, in terms of clinical effectiveness or cost-effectiveness, that NOACs should replace LMWH for prevention of VTE after hip or knee surgery. For treatment of VTE, and for preventing repeat venous thromboembolisms, risk of complications due to bleeding was lower for some NOACs than for warfarin. Apixaban was the most cost-effective treatment for VTE, but it is not cost-effective to prescribe NOACs or warfarin for preventing recurrence of VTE.
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This report

The research reported in this issue of the journal was funded by the HTA programme as project number 11/92/17. The contractual start date was in October 2013. The draft report began editorial review in May 2015 and was accepted for publication in December 2015. 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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