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 The Lancet, [Volume 376, Issue 9736](#), Pages 163 - 172, 17 July 2010
 doi:10.1016/S0140-6736(10)60964-6 [Cite or Link Using DOI](#)
 Published Online: 08 July 2010

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Telemonitoring and self-management in the control of hypertension (TASMINH2): a randomised controlled trial

 Prof [Richard J McManus](#) FRCPG ^a , Prof [Jonathan Mant](#) MD ^c, [Emma P Bray](#) PhD ^a, [Roger Holder](#) BSc ^a, [Miren I Jones](#) PhD ^a, [Sheila Greenfield](#) PhD ^a, [Billingsley Kaambwa](#) PhD ^b, [Miriam Banting](#) MSc ^a, Prof [Stirling Bryan](#) PhD ^d, Prof [Paul Little](#) MD ^e, Prof [Bryan Williams](#) MD ^f, Prof [FD Richard Hobbs](#) FRCPG ^a

Summary

Background

Control of blood pressure is a key component of cardiovascular disease prevention, but is difficult to achieve and until recently has been the sole preserve of health professionals. This study assessed whether self-management by people with poorly controlled hypertension resulted in better blood pressure control compared with usual care.

Methods

This randomised controlled trial was undertaken in 24 general practices in the UK. Patients aged 35–85 years were eligible for enrolment if they had blood pressure more than 140/90 mm Hg despite antihypertensive treatment and were willing to self-manage their hypertension. Participants were randomly assigned in a 1:1 ratio to self-management, consisting of self-monitoring of blood pressure and self-titration of antihypertensive drugs, combined with telemonitoring of home blood pressure measurements or to usual care. Randomisation was done by use of a central web-based system and was stratified by general practice with minimisation for sex, baseline systolic blood pressure, and presence or absence of diabetes or chronic kidney disease. Neither participants nor investigators were masked to group assignment. The primary endpoint was change in mean systolic blood pressure between baseline and each follow-up point (6 months and 12 months). All randomised patients who attended follow-up visits at 6 months and 12 months and had complete data for the primary outcome were included in the analysis, without imputation for missing data. This study is registered as an International Standard Randomised Controlled Trial, number ISRCTN17585681.

Findings

527 participants were randomly assigned to self-management (n=263) or control (n=264), of whom 480 (91%; self-management, n=234; control, n=246) were included in the primary analysis. Mean systolic blood pressure decreased by 12.9 mm Hg (95% CI 10.4–15.5) from baseline to 6 months in the self-management group and by 9.2 mm Hg (6.7–11.8) in the control group (difference between groups 3.7 mm Hg, 0.8–6.6; p=0.013). From baseline to 12 months, systolic blood pressure decreased by 17.6 mm Hg (14.9–20.3) in the self-management group and by 12.2 mm Hg (9.5–14.9) in the control group (difference between groups 5.4 mm Hg, 2.4–8.5; p=0.0004). Frequency of most side-effects did not differ between groups, apart from leg swelling (self-management, 74 patients [32%]; control, 55 patients [22%]; p=0.022).

Interpretation

Self-management of hypertension in combination with telemonitoring of blood pressure measurements represents an important new addition to control of hypertension in primary care.

Funding

Department of Health Policy Research Programme, National Coordinating Centre for Research Capacity Development, and Midlands Research Practices Consortium.

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a Primary Care Clinical Sciences, University of Birmingham and National Institute for Health Research (NIHR) National School for Primary Care Research, Birmingham, UK


b Health Economics Unit, University of Birmingham and National Institute for Health Research (NIHR) National School for Primary Care Research, Birmingham, UK

c General Practice and Primary Care Research Unit, Institute of Public Health, University of Cambridge, Cambridge, UK

d Centre for Clinical Epidemiology and Evaluation, Vancouver Coastal Health Research Institute, and School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada

e School of Medicine, University of Southampton and NIHR National School for Primary Care Research, Southampton, UK

f Department of Cardiovascular Sciences, University of Leicester and Leicester NIHR Cardiovascular Biomedical Research Unit, Glenfield Hospital, Leicester, UK

 Correspondence to: Prof R J McManus, Primary Care Clinical Sciences, Primary Care Clinical Sciences Building, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK

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