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

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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.

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