

Community pharmacist-led interventions improve blood pressure control: systematic review and meta-analysis of randomised controlled trials

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Introduction: High blood pressure is a very common and important cause of morbidity and death from heart failure and serious vascular diseases, yet blood pressure control is poor in many patients. Community pharmacists are in regular contact with patients visiting to collect their blood pressure medications.

Aim: To undertake a systematic review and meta-analysis of randomised controlled trials (RCTs) that assessed the impact of community pharmacist-led interventions on systolic and diastolic blood pressure in patients with hypertension.

Methods: Eight electronic databases were searched in August 2012 (Web of Science, Embase, The Cochrane Library, Medline Ovid, Biomed Central, Biosis Citation Index, CINAHL, PsycINFO). No date restrictions were applied to the searches. Papers published in English only were included in the review. The reference lists of all included full papers were checked. Two reviewers (EC and PS) independently screened the search results and extracted the data from the included papers. We used the Cochrane Collaboration's tool for assessing risk of bias in the included RCTs.[1] Where possible, a random effect meta-analysis was used to synthesise data.

Results: From 320 potential papers identified, 15 RCTs were included. The RCTs contained a total of 2,156 participants with hypertension (mean age range 48 to 72 years), study sizes ranged from 49 to 640, study duration ranged from 3 to 13 months and were conducted in Australia (n = 1), Canada (n = 2), Portugal (n = 1), Spain (n = 2), Thailand, (n = 1), United States (n = 7) and United Kingdom (n = 1). All studies used an active intervention by a pharmacist and a control group with usual care. Pharmacological interventions included patient education on medication and disease management, advice to improve medicine adherence, management of adverse effects and advice to prescribers on improving treatment regimens. Non-pharmacological interventions included advice on diet, weight management, smoking cessation and alcohol consumption. Community pharmacist-led interventions produced a pooled effect of 5.6 mm Hg reduction in systolic blood pressure (95% CI -8.2 to -3.1) and 2.4 mm Hg reduction in diastolic blood pressure (95% CI -3.6 to -1.3). The majority of the 15 RCTs did not report blinding (n = 12), adequate concealment (n = 13) or power calculation (n = 8).

Conclusions: Community pharmacist-led interventions can produce a clinically relevant reduction in blood pressure in patients with hypertension. Caution is needed when interpreting these results due to the variability in study quality. Future robust, higher quality studies are needed to determine whether pharmacist supported improvements in blood pressure control are sustained in the long-term, and to inform future policy on involvement of community pharmacists in improving management of hypertension to reduce cardiovascular risk.

[1] Higgins JP, Altman DG, Gotzsche PC, Juni P, Moher D, Oxman AD et al. The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ* 2011;343:d5928.