COCHRANE Nursing Care Field

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Summaries of Nursing Care-Related Systematic Reviews from the Cochrane Library

Interventions used to improve control of blood pressure in patients with hypertension

Keywords: hypertension, blood pressure, systematic review

Review questions:

- What interventions are effective in improving the control of blood pressure in patients with hypertension?
- Are reminders effective on improving the follow-up of patients with hypertension?

Nursing implications

- Hypertension is an important public health problem in terms of associated stroke and cardiovascular events. Whilst evidence has demonstrated the benefits of antihypertension drug therapy in controlling blood pressure, community-based studies throughout the world have shown that blood pressure goals are achieved in only 25 to 40% of patients who take antihypertensive drug treatment. A Cochrane review was therefore warranted to investigate how care for hypertensive patients should be organised and delivered in the community to help improve blood pressure control.

Study characteristics:

- This summary is based on a Cochrane review containing 72 randomised controlled trials (RCTs). Participants were aged 18 years or over with a diagnosis of essential hypertension that could be treated with or without antihypertensive drugs. Participants could be from primary care, outpatient or community settings.
- Interventions were aimed at improving control of blood pressure or clinic attendance and were classified as either self-monitoring, educational interventions directed to the patient, educational interventions directed to the health professional, health professional led care, organisational interventions that aimed to improve the delivery of care, and appointment reminder systems.
- The outcomes of interest were mean systolic blood pressure (SBP) and/or mean diastolic blood pressure (DBP), control of blood pressure, and proportion of patients followed-up at clinic.
- The methodological quality of included studies was classed as poor to moderate. The randomisation process was described in thirty (42%) of the 72 trials whilst only fourteen (19%) had adequate allocation concealment. In 14 studies (21%) outcome assessors were blind to treatment allocation and in 18 studies there were losses to follow-up of 20% or more. Meta-analysis was undertaken where possible.

Summary of key evidence:

- Eighteen trials evaluated self-

monitoring. Although significant between-group heterogeneity was present, pooled data from 12 RCTs showed that self-monitoring was associated with a significant reduction in mean SBP (Weighted Mean Difference (WMD) -2.5mmHg (95% confidence intervals (CI):-3.7 to -1.3mmHg) compared with controls. Pooled data from 14 RCTs revealed that self-monitoring was associated with a more modest reduction in mean DBP (WMD -1.8mmHg 95%CI -2.4 to -1.2 mmHg) compared with controls. In the six RCTs that reported on control of blood pressure, no significant improvement was shown.

- Twenty trials examined educational interventions directed to the patient compared with a control, however due to heterogeneity results for mean difference SBP and DBP were not valid.
- Ten trials investigated educational interventions directed towards the physician compared with a control. There was no significant decrease in mean SBP or DBP. Control of blood pressure produced heterogeneous results.
- Twelve trials found that health professional (nurse or pharmacist) led care may be a promising way of delivering care, with the majority of RCTs being associated with improved blood pressure control. For all three outcomes, pooling of results from individual RCTs produced heterogeneous results, so results should be interpreted with caution.
- Nine trials compared organisational interventions that aimed to improve the delivery of care with a control. For all three outcomes, pooling of results produced heterogeneous results. The largest RCT (the Hypertension Detection and Follow-Up Program (HDFP)) produced significant decreases in SBP and DBP across the three groups (patients were stratified according to level of entry DBP level).
- Eight trials evaluated appointment reminder systems compared with controls. In five, reminder systems were associated with an improvement in follow-up (odds ratio [OR] of being lost to follow-up 0.4, 95%CI 0.3 to 0.5), however, the pooled results were heterogenous because of one single outlying RCT and should be treated with caution.

Best practice recommendations:

- Self-monitoring was associated with a decline in systolic blood pressure (2.5 mmHg) and diastolic blood pressure (1.8 mmHg).
- None of the other interventions were associated with large, clinically important, decrease in either systolic or diastolic pressure.
- Effective delivery of hypertensive care requires a systematic approach in the community, incorporating regular review of patients and a willingness to intensify antihypertensive drug treatment when blood pressure goals are not being met.

Reference

Glynn LG, Murphy AW, Smith SM, Schroeder K, Fahey T. Interventions used to improve control of blood pressure in patients with hypertension. Cochrane Database of Systematic Reviews 2010, Issue 3. Art. No.: CD005182. DOI: 10.1002/14651858.CD005182.pub4.

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高血壓患者血壓控制介入方案成效評估

關鍵詞：高血壓、血壓、系統性文獻回顧

文獻提問

- 何種有效的介入方案對高血壓患者血壓控制最佳？
- 提醒方案的介入，是否能持續改善高血壓患者血壓控制？

護理運用

- 如同中風及心血管疾病，高血壓防治是公共衛生重要議題。儘管證據顯示使用抗高血壓藥物能有效控制血壓。然而，全世界以社區為研究場域的實證顯示，僅有 25-40% 的服藥病人，達到血壓控制。因此，有必要進行文獻檢視，以了解社區高血壓患者，有效血壓控制方案。

研究屬性

- 本研究文獻回顧包含 72 篇隨機分派研究文章。病人年紀為 18 歲或 18 歲以上，患有本態性高血壓，病人中有些有接受抗高血壓藥物治療有些則無。收案來源以基層醫療診所、門診或社區個案為對象。
- 介入措施主要在改善血壓控制，其包括自我監控、直接提供病人衛教指導、健康專業人員接受教育訓練、以健康專業人員為導向、有組織的照護傳遞以及預約提醒系統提供。
- 以平均收縮壓、平均舒張壓、血壓控制以及門診病人追蹤比例為效益評估。
- 納入文章等級被歸類到中度及較差等級。有 42% 文獻有描述隨機抽樣過程，僅有 19% 有適當描述，21% 有雙盲說明，20% 以上未說明追蹤狀況。

總結主要證據

- 有 18 篇試驗性研究是以自我監測方案進行。儘管研究間異質性有達顯著差異，然而統合 12 篇隨機分派研究顯示，與控制組比較發現，以自我監測血壓方案能有效降低平均 2.5mmHg 收縮壓。另外，統合 14 篇隨機分派研究顯示，與控制組比較發現，以自我監測血壓方案更能有效降低平均 1.8mmHg 舒張壓 . 其他 6 篇隨機分派研究顯示，與控制組比較發現，兩者無統計差異。
- 20 篇隨機分派研究顯示，與控制組比較發現，以自我監測血壓方案能有效降低平均 2.5mmHg 收縮壓
- 10 篇研究調查教育介入方案成效。結果顯示，與控制組比較，實驗組在平均收縮壓及舒張壓無顯著差異。
- 12 篇由專業健康照護人員 (護士或藥師) 提供照護研究顯示，與血壓控制有顯著關係，由於各研究間有異質性，因此在說明時應特別注意
- 有 9 篇血壓改善性研究有控制組。3 篇存在研究間異質性。此外，其中一篇最大型研究，血壓隨機控制介入追蹤調查，可以看到三組間 (以舒張壓分 3 層)，比較發現收縮壓及舒張壓均明顯降低。
- 9 篇以預約提醒系統比較與控制組差

異，其中 5 篇經追蹤後發現有統計差異，然而文獻間仍存有異質性，需要加以注意。

臨床最佳建議指引

- 自我監控血壓方案能有效降低 2.5mmHg 收縮壓及 1.8mmHg 舒張壓。
- 除上述介入措施之外，目前無其他有效介入方案能降低病人收縮壓及舒張壓。
- 針對社區個案，需要有系統性的方案進行血壓管理，當血壓控制成效不彰時，須結合與病人定期訪談及強化血壓藥物控制。

參考文獻

Glynn LG, Murphy AW, Smith SM, Schroeder K, Fahey T. Interventions used to improve control of blood pressure in patients with hypertension. Cochrane Database of Systematic Reviews 2010, Issue 3. Art. No.: CD005182. DOI: 10.1002/14651858.CD005182.pub4.

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