Council's Corner: Hypertension Issues - a personal view

Nadia Khan

Professor of Medicine at Department of Medicine, University of British Columbia, Centre for Health Evaluation & Outcomes Sciences, Vancouver, British Columbia, Canada

Expanding the Workforce in Hypertension: A Focus on Pharmacists

Hypertension awareness and control remains sub-optimal globally, even in developed countries with universal access to health care and subsidization of medications[1,2]. The reasons for low awareness of hypertension and sub-optimal control of blood pressure are multifactorial and include limited access to health care[3]. Antihypertensive prescribing and hypertension management rests largely on the shoulders of primary care physicians. From the global health authority, physician to patient ratios range from as low as 0.02 physicians in Niger to 4.42 physicians per 1000 in Norway with 44% of WHO countries having <1 physician per 1000 patients[4]. Other key barriers include physician inertia and reluctance to treat the elderly to target, increasing comorbidity and complexity of patients, and patient non-adherence[3]. Physicians have limited time with patients to measure BP, evaluate for medication non-adherence, lifestyle modification counseling and institute medication changes. Novel approaches are needed to more efficiently and effectively improve BP control and expanding the hypertension work force is a strategy worth considering.

There is emerging evidence that optimizing the full scope of care of other health care professionals including pharmacists for team-based care may offer a solution to improving hypertension control. In North America, patients visit pharmacists 5 to 7 times more frequently than physicians, positioning pharmacists and community pharmacies as additional points of health care contact[5]. In a meta-analysis by Santschi et al., of 39 RCTs (n=14244 patients), pharmacist interventions were compared with usual care in the control of blood pressure[6]. The majority of trials evaluated pharmacy-led patient education, feedback and suggested medication changes to physicians, and medication management. Interventions were led by pharmacists in 23 of the 39 trials and conducted in collaboration with other health professional teams usually including physicians (16 trials). Patients were followed at outpatient clinics or by GPs. Overall, pharmacist interventions were associated with small to moderate lowering of blood pressure -7.6 mmHg (95%CI: -13.9 to -1.4mmHg) /3.9mmHg (95%CI: -9.9 to 2.0 mmHg). However, there was substantial heterogeneity in magnitude of BP lowering effect between studies and evidence of publication bias. In analyzing sources of heterogeneity, pharmacist-led care was associated with a greater magnitude of blood pressure lowering compared with collaborative care (-8.5 vs. -6.3 mmHg, p=0.046) but no difference in diastolic pressure.

A recently published trial further examined the effectiveness of a fuller scope of pharmacy interventions in 340 patients with diagnosed hypertension in Canada[7]. Patients were randomized to specially trained pharmacists who were able to independently prescribe antihypertensive therapy using the Hypertension Canada guidelines, in addition to counseling and reviewing medications compared with usual care. The primary care physician was always notified of any medication changes and patients continued to access their primary care physician. Pharmacists were responsible for follow-up and monitoring lab values. At 6 months, the mean difference in BP was 6.6mmHg (+/-1.9mmHg)/3.2

(+/-1.3 mmHg). More patients achieved target BP in the pharmacist intervention strategy compared with usual care (58% vs. 37%). These studies and others in middle-income countries[8], collectively indicate that expanding the hypertension workforce using team-based care is a promising strategy for improving hypertension control. Moreover, cost effectiveness analysis also indicates that team-based care with full scope pharmacy support is cost effective[9].

Challenges and Opportunities

Although these benefits were known for several years, incorporating widespread use of team-based care for hypertension has been challenging. Several countries, the Netherlands, Canada, and US for example, adopted expanded roles for pharmacists ranging from educating patients, medication reconciliation to independent prescribing, but uptake has been slow. Limited uptake of shared care is ascribed to lack of trust among physicians for pharmacists to expand their role, lack of experience and expertise by pharmacists in clinical care, insufficient environments for private patient examination, poorly defined prescribed roles for pharmacists, inadequate remuneration or time constraints of pharmacists to take on a health care role as they transition from product-centered to patient-centered activities[10].

Several strategies may help to mitigate these barriers and create sustainable team-based care. These strategies include ensuring sufficient communication and clinical training in pharmacy degree programs, development of hypertension curriculum and training programs for community pharmacists, achieving buy in and greater collaboration with the primary care community, development of platforms to improve sharing of health records between pharmacies and physician offices and ensuring appropriate remuneration for these activities[11].

Hypertension prevalence is growing globally and we need to implement new strategies to improve blood pressure control. Team-based models of care that leverage the full scope of pharmacists' and other health professionals' skills are an untapped solution whose time has come.

REFERENCES:

1. Collaboration NCDRF. Worldwide trends in blood pressure from 1975 to 2015: a pooled analysis of 1479 population-based measurement studies with 19.1 million participants. *Lancet.* 2017;389(10064):37-55.

2. Bakris G, Sarafidis P, Agarwal R, Ruilope L. Review of blood pressure control rates and outcomes. *J Am Soc Hypertens.* 2014;8(2):127-141.

3. Ogedegbe G. Barriers to optimal hypertension control. *J Clin Hypertens* (Greenwich). 2008;10(8):644-6.

4. http://www.who.int/gho/health_workforce/physicians_density/en/

5. Campbell K. DCCT opens new opportunities for pharmacists. *California Pharmacist.* 1993:26-27. 6. Santschi V, Chiolero A, Colosimo AL, et al. Improving blood pressure control through pharmacist interventions: a meta-analysis of randomized controlled trials. *Journal of the American Heart Association.* 2014;3(2):e000718.

7. Tsuyuki RT, Houle SK, Charrois TL, et al. Randomized Trial of the Effect of Pharmacist Prescribing on Improving Blood Pressure in the Community: The Alberta Clinical Trial in Optimizing Hypertension (RxACTION). *Circulation.* 2015;132(2):93-100.

8. Pande S, Hiller JE, Nkansah N, Bero L. The effect of pharmacist-provided non-dispensing services on patient outcomes, health service utilisation and costs in low- and middle-income countries. *Cochrane Database Syst Rev.* 2013;(2):CD010398. doi: 10.1002/14651858.CD010398. 9. Marra C, Johnston J, Santschi V, Tsuyuki R. Cost-effectiveness of pharmacist care for managing hypertension in Canada. *Canadian Pharmacists Journal.* 2017. 150(3): 184–197.

10. Löffler C, Koudmani C, Böhmer F, Paschka SD, Höck J, Drewelow E, Stremme M, Stahlhacke B, Altiner A. Perceptions of interprofessional collaboration of general practitioners and community pharmacists - a qualitative study. *BMC Health Serv Res.* 2017;17(1):224.

11. Wells BG, Bertin RJ. A vision of pharmacy's future roles, responsibilities, and manpower needs in the United States. Board of Pharmaceutical Specialties. *Pharmacotherapy.* 2001;21(1):126-7.

- Nadia Khan

View Women In Hypertension Spotlight features