ABSTRACT

Adherence or compliance, in the context of medical treatment, refers to how well a patient follows and sticks to the management plan developed with her/his health care provider, which may include pharmacologic agents as well as changes in lifestyle. Adherence is of great concern in asymptomatic conditions such as hypertension, where lack of control may have serious ramifications including end organ damage and premature mortality. To address this issue, the Canadian Coalition for High Blood Pressure Prevention and Control established a national *Advisory Committee on Adherence to the Management of High Blood Pressure*. The Advisory Committee consisted of 11 members from different disciplines of health care providers. The Committee reviewed all evidences to date and drew up four practical recommendations with respect to patient, provider and environment. Based on Canadian Task Force on Periodic Health Examination's guidelines, all four recommendations can be classified as 'level C' with a quality of evidence of II.

Adherence to Management of High Blood Pressure: Recommendations of the Canadian Coalition for High Blood Pressure Prevention and Control

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Adherence or compliance, in the context of medical treatment, refers to how well a patient follows and sticks to the management plan developed with her/his health care provider, which may include pharmacologic agents as well as changes in lifestyle. Patients' non-adherence, or non-compliance, is common in chronic asymptomatic conditions such as high blood pressure. Non-compliance leads to poor blood pressure control and a deleterious

outcome (stroke and coronary heart disease). As well, non-compliance can cancel out the efforts that go into diagnosis, diagnostic work-up, and counselling of hypertensive patients. In fact, non-adherence costs our society millions of dollars every year in ineffective therapeutic efforts.

There have been some initiatives to address non-adherence by health education. The intensive public education campaign in the 1970s and 80s¹ encouraged people to track their own blood pressure and adhere to prescribed therapy. In the late 80s and 90s, public education on adherence has slackened and intensive patient education has not been perceived. Furthermore, media campaigns on such issues as the relationship between salt and hypertension, or on the use of oral calcium channel blockers² have resulted in misinformation and have negatively influenced the public's willingness to be treated. These controversies could be better dealt with in the scientific arena, establishing proper evidence so as to avoid any confusion in the minds of the public.

Health care providers can help patients improve their adherence.^{3,4} A panel of 11 health care providers from various disciplines reviewed evidence on compliance, from both the literature and their personal experience, to arrive at practical recommendations. These recommendations are directed at health care professionals (family and general physicians, nurses, pharmacists,

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dietitians, health educators and hypertension specialists) as well as the general public. The panel, while recognizing that patient education is insufficient to change behaviour, believes that such education is essential to successful, long-term hypertension therapy. This article is the summary document and evidence materials are provided in the two companion papers.^{5,6}

RECOMMENDATIONS

The National Working Group on Adherence to High Blood Pressure Management reviewed strategies for successful adherence in both non-pharmacologic and pharmacologic management. Based on randomized controlled trials, Haynes et al.⁷ concluded that even the most effective interventions tried to date did not lead to substantial improvements in adherence. We looked at epidemiologic and observational studies that we found to be valid and developed the following recommendations, which can be classified as "level C", according to the Task Force on Periodic Health Examination,⁸ with a quality of evidence of II (II-1 to II-3). The levels and quality of evidence are explained in Appendix I. We organized the recommendations in terms of the patient, the provider, and the environment.

Patient factors

A well-informed patient is more likely to be adherent than one lacking information.^{9,10} It is thus important to educate patients concerning the consequences of non-adherence and to motivate them to adhere to the regimens prescribed by the health care provider. Increased attention should be paid to social support mechanisms and family involvement in the treatment regimens.¹¹

Recommendation 1

Patients should be provided with written and verbal instructions regarding the etiology and prognosis of hypertension as well as the benefits of pharmacologic and non-pharmacologic therapy. Providing information at the reading level of the patient is crucial, as is a periodic follow-up. Audiovisual technologies may be useful for some patients.

Appendix I The Level and Quality of Evidence

Quality of Evidence

- I: Evidence obtained from at least one properly randomized controlled trial.
- II-1: Evidence obtained from well-designed controlled trials without randomization.
- II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group.
- II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category.
- III: Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

Classification of Recommendations

- A: There is good evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
- B: There is fair evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
- C: There is poor evidence regarding the inclusion or exclusion of the condition in a periodic health examination, but recommendations may be made on other grounds.
- D: There is fair evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.
- E: There is good evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.

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For chronic conditions such as high blood pressure, patients must realize that management, both non-pharmacologic and pharmacologic, is a lifelong process. For example, patients need to know that the advice of the health care provider cannot be set aside as soon as they feel their blood pressure is under control. Health care professionals, patients, and patients' families should all be educated regarding the importance of adherence to blood-pressure reduction therapy and to mechanisms that improve adherence.¹¹

For patients whose adherence to blood-pressure reduction therapy has been identified as a problem, every effort should be made to increase participation in their own care through self-measurement of blood pressure and involvement in the selection of therapies.

Recommendation 2

Medication regimens should be simplified and a combination of behaviour strategies provided. These should include tailoring pill-taking to patients' daily habits and rituals, and advocating self-monitoring of pills and blood pressure.

Once-daily medication dosing, rather than twice- or thrice-daily dosing, substantially increases adherence rates.⁶ Behaviour

techniques that help patients remember to take their pills have also been shown to enhance adherence levels.¹²

Provider factors

Many factors lead to poor adherence by patients, some of which can be attributed to health care providers' lack of training in behavioural modification; lack of time available for counselling; or lack of interest in, and belief that, intervention (particularly non-pharmacologic) can be successful.⁵

Recommendation 3

Physicians, nurses and pharmacists should spend time during the patient's visit reviewing adherence to treatment. Nurses and pharmacists should provide patients with advice on adherence and monitor patient adherence regularly. Physicians should try to avoid gaps in the information transmitted to patients. At each visit, health care professionals should assess a patient's adherence by direct questioning. Family support should be instigated where appropriate.

If physicians lack sufficient time to explain the consequences of non-adherence to patients, they should delegate the task to other health care providers. Comprehensive and complete information transfer is imperative.

TABLE I
Strategies and Maneuvers to Improve Patient Adherence in the Management of High Blood Pressure

Directed to	Strategy	Maneuvers
Patients/Clients	Adherence to therapy/advice	<ul style="list-style-type: none"> • Change pill-taking and make the necessary behavioural changes • Fill prescriptions as per advice and take medications regularly • Keep medications near toothbrush • Take medications every day at the same time • Feel free to get information on side effects and intercurrent illnesses • Check with health care provider(s) before starting new medications for any cause of illness
	Self measurement of blood pressure	<ul style="list-style-type: none"> • Have electronic/mercury manometer calibrated • Follow self-measurement guidelines¹⁵ • Consult a health care provider for interpretation/reconfirmation
	Behavioural modification	<ul style="list-style-type: none"> • Try weight reduction • Stop smoking • Adhere to a healthy diet • Improve physical activity • Seek input from health care provider(s)
Patient's family	Provision of family support	<ul style="list-style-type: none"> • Remind patients to adhere to therapeutic prescription • Advocate a healthy diet • Offer psychosocial support
Health care provider(s)	Information transfer	<ul style="list-style-type: none"> • Provide written/verbal information so as to encourage adherence to treatment regimen (both non-pharmacologic and pharmacologic management) • Verify adherence to behavioural modifications (pill count) as advised • Provide information as to benefits of adherence • Provide information on potential side effects/ and intercurrent illnesses • Offer reassurance and encouragement • Do a follow-up
	Provision of continuing medical education	<ul style="list-style-type: none"> • Be better prepared for counselling • Keep up to date on current theories, strategies and tools
Pharmaceutical industry	Cost effectiveness	<ul style="list-style-type: none"> • Ensure competitive pricing in view of patient's perception • Provide information dissemination based on evidence (professional education/patient education)

Environmental factors

Non-adherence is compounded by such environmental factors as cost of medication and dosing frequency.¹³ Any evaluation of the cost of medication should look at the effectiveness of treatment beyond the lowering of blood pressure.

Recommendation 4

For most patients, it is preferable to prescribe medications that can be taken once a day. As well, the medications chosen must be realistically priced from the patient's perspective.

Table I provides feasible, practical strategies to improve patient adherence to management of high blood pressure.

CONCLUSION

Despite the growing awareness among health care providers of the value of improving patients' adherence, only 50% of patients comply with long-term drug therapy, and an even smaller percentage comply with lifestyle alterations.¹⁴

In order to improve a patient's adherence, both provider and patient must work in partnership. Effective strategies are multifaceted, addressing the three factors of patient, provider, and environment. It is also important to recognize that some patients are resistant to changing their behaviour. Better patient education tools must be developed, incorporating appealing visual aids that

motivate adherence to the prescribed regimen.

With a continued partnership model and better coordinated patient education approaches, the full benefits of adherence and effective control of high blood pressure can be achieved.

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