

Long-term adherence to therapy: the clue to prevent hypertension consequences

Luis M. Ruilope*

Hypertension Unit, Hospital 12 de Octubre and Department of Preventive Medicine and Public Health, University Autonoma, Madrid, Spain

Online publish-ahead-of-print 29 August 2013

This editorial refers to ‘Adherence to antihypertensive therapy prior to the first presentation of stroke in hypertensive adults: population-based study’[†], by K. Herrtua *et al.*, on page 2933

Cardiovascular (CV) disease is the leading cause of death worldwide, accounting for 30% of all deaths, and arterial hypertension is the most important modifiable risk factor to diminish this burden.¹ According to the latest Guidelines, daily compliance and long-term adherence to therapy are the most important aims for the adequate control of arterial hypertension.² As can be seen in *Figure 1*, the most relevant

reasons for a poor or low compliance depend in the first place on a poor relationship between doctor and patient preventing the latter from attaining an adequate understanding of the relevance of the disease and its consequences. This is particularly so if the patient has received only a low level of education and is not helped by his/her partner or family. Side effects of medications, complicated treatment schedules, memory or psychiatric problems, and elevated cost of medications will also contribute to make the patient poorly compliant. It is recognized that patients with hypertension or hyperlipidaemia tend to take less than half of their prescribed medications.³ However, few studies have investigated the relevance of a low

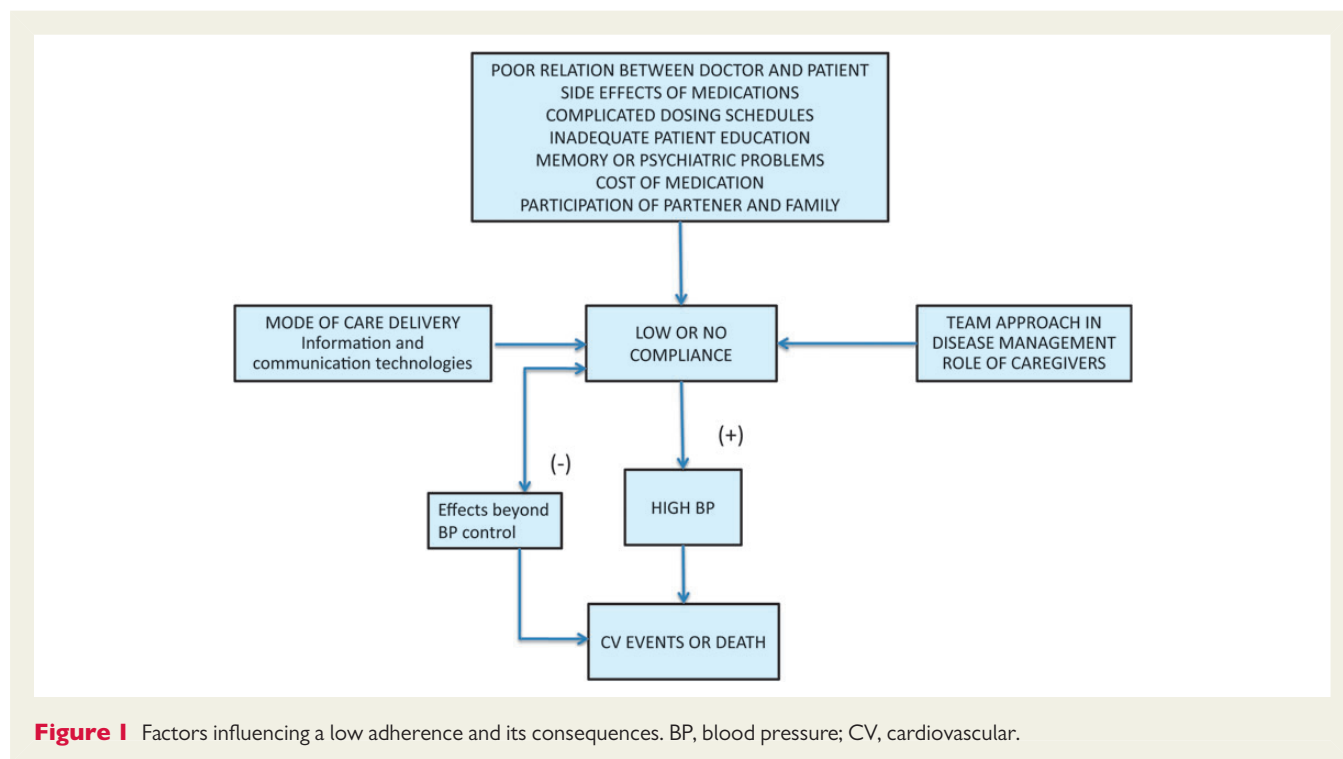


Figure 1 Factors influencing a low adherence and its consequences. BP, blood pressure; CV, cardiovascular.

* Corresponding author. Unidad de Hipertensión, Hospital 12 de Octubre, 28041 Madrid, Spain. Tel: +34 629175770, Fax: +34 915765644, Email: ruilope@ad-hocbox.com

The opinions expressed in this article are not necessarily those of the Editors of the *European Heart Journal* or of the European Society of Cardiology.

[†] doi:10.1093/eurheartj/eh219.

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author 2013. For permissions please email: journals.permissions@oup.com

adherence to treatment to the CV consequences of arterial hypertension, and none until the study of Herttua *et al.*⁴ has measured adherence repeatedly over a long period of time.

One of the most relevant findings of the study is that the presence of low compliance shortly after treatment initiation was observed in patients suffering a fatal or non-fatal stroke years later when compared with those who did not suffer such an event. The study also shows that short- and long-term risk of fatal and non-fatal stroke increased at each step down in the level of adherence. Confirming previous data, non-adherent patients suffering a stroke were older, less well educated, and had a lower household income. The fact that early total or partial discontinuation of therapy predicts the future development of a CV event reinforces the need for an adequate adherence to therapy consisting either of adequate lifestyle changes or of the subsequent addition of drugs from the beginning of treatment. In this sense, the VALUE trial proved that an adequate control of blood pressure obtained within the first 6 months of therapy was followed by a significantly lower number of CV events and death during the remainder of the follow-up in the trial.⁵ Otherwise, as a consequence of a low adherence to treatment, blood pressure will remain elevated, causing progressive CV and renal damage, and the potential existence of other non-blood pressure-dependent effects that facilitate the regression of CV and/or renal damage will not take place.⁶ Correction of low adherence in established hypertension has been shown to improve by using an approach to the disease involving a team of care givers constituted by different health-care personnel, particularly nurses, through different modes of care delivery, and also through the use of information and communication techniques.²

However, as demonstrated in the study of Herttua *et al.*,⁴ an early adherence is required to arrest or slow down the progression of CV and renal damage. In this sense, it has been suggested that estimation of lifetime risk should be used as an adjunct to 10 years risk estimation particularly in subjects below the age of 50 years.⁷ Such a strategy

could contribute to improve patient understanding of CV risk, to identify new sections of the population who might benefit from preventive therapy, and to motivate lifestyle changes and adherence to therapy early in the course of progression of the disease. An accurate perception of CV risk by both patients and physicians is essential for CV protection. Informing patients of their future risk of a CV event serves as the first step forcing them to make decisions about the ways to reduce that risk, and the principal is to adhere to adequate lifestyle changes and an adequate daily compliance with pills maintained for life.

Conflict of interest: none declared.

References

1. The GBDS consortium. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study. *Lancet* 2012;**380**:2095–2128.
2. Mancia G, Fagard R, Narkiewicz K, Redon J, Zanchetti A, Böhm M, Christiaens T, Cifkova R, De Backer G, Dominiczak A, Galderisi M, Grobbee D, Jaarsma T, Kirchhof P, Kjeldsen S, Laurent S, Manolis AJ, Nilsson PM, Ruilope LM, Schmieder RE, Sirnes PE, Sleight P, Viigima M, Waeber B, Zannad F. 2013 ESH/ESC Guidelines for the management of arterial hypertension: the Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J* 2013;**34**:2159–2219.
3. Viswanathan M, Golin CE, Jones CD, Ashok M, Blalock SJ, Wines RCM, Coker-Schwimmer E, Rosen DL, Sista P, Lohr KN. Interventions to improve adherence to self-administered medications for chronic diseases in United States. *Ann Intern Med* 2012;**157**:785–795.
4. Herttua K, Tabák AG, Martikainen P, Vahtera J, Kivimäki M. Adherence to antihypertensive therapy prior to the first presentation of stroke in hypertensive adults: population-based study. *Eur Heart J* 2013;**34**:2933–2939.
5. Julius S, Kjeldsen SE, Weber M, Brunner HR, Ekman S, Hansson L, Hua T, Laragh J, McInnes, Mitchell L, Plat F, Schork A, Smith B, Zanchetti A. Outcomes in hypertensive patients at high cardiovascular risk treated with regimens based on valsartan or amlodipine: the VALUE randomised trial. *Lancet* 2004;**363**:2022–2031.
6. Ruilope LM. Current challenges in the clinical management of hypertension. *Nat Rev Cardiol* 2012;**9**:267–275.
7. Karmall KN, Lloyd-Jones DM. Adding a life-course perspective to cardiovascular risk communication. *Nat Rev Cardiol* 2013;**10**:111–115.