



Luis Ruilope

# The challenge posed by pharmacological non-adherence in hypertension

Cardiovascular disease (CVD) is the primary cause of death worldwide, accounting for approximately 30% of total annual deaths.<sup>1</sup> High blood pressure is the most important modifiable risk factor that promotes CVD. Recently published guidelines of the European Society of Hypertension and European Society of Cardiology<sup>2</sup> recognize that both day-to-day and long-term adherence to anti-hypertensive medication are the most important factors in obtaining adequate control of blood pressure. Indeed, the only patients who report a significant reduction of acute CV events are those with excellent adherence from the initiation of pharmacological treatment.<sup>3</sup>

However, in reality, the majority of patients with hypertension and/or hyperlipidaemia tend to take less than half of their prescribed medications.<sup>4</sup> In fact, a 2013 publication that measured adherence repeatedly over a long period of time demonstrated the need to maintain long-term adherence in order to avoid the development of stroke.<sup>5</sup> Moreover, poor adherence is accompanied by maintained elevated blood pressure; this promotes the enhancement of atherosclerosis, arterial stiffness and, often, the development of kidney disease. Such complications subsequently lead to an increased CV risk, which can result in the development of CV events or death.

Patients with low adherence tend to be older and less well educated, with a lower household income, which can affect the patient's ability to afford therapy. These circumstances tend to complicate the relationship between the doctor

and patient.<sup>6</sup> Interestingly, a recent study has investigated the absence of adequate long-term adherence in resistant arterial hypertension: the most dangerous form of arterial hypertension with exception to malignant hypertension.<sup>7</sup> High rates of non-adherence to antihypertensive treatment have been demonstrated in these patients through assays that show the absence of drug metabolites in urine. Adherence was particularly poor for patients with suboptimal blood pressure control and those who had been referred for renal denervation.<sup>7</sup> This is a relevant finding as these patients have the highest risk of suffering the consequences of arterial hypertension.

Widespread difficulty with adherence to strict pharmacological regimens creates an unmet need for novel, safe and effective hypertensive therapies that do not require daily adherence in order to be effective. Device therapies, including renal denervation therapy and baroreceptor activation therapy may offer an alternative or adjuvant to daily pill taking. However, the ability of these new device therapies to decrease or eliminate the need for adherent therapy needs to be elucidated further in carefully planned clinical trials. Therefore, it is also necessary to ensure adequate adherence in patients in whom interventional techniques can be used to lower blood pressure as, to date, the use of interventional techniques does not yet replace the need for antihypertensive drugs.<sup>8</sup>

So we must ask the question: can long-term adherence be improved in poorly adherent patients? Whilst the answer to this question is positive when interventions such as blister packaging, case management, or education with behavioural support are undertaken,<sup>4</sup> it will require an improvement in doctor and patient relations with the participation of other caregivers such as nurses, pharmacists and also family members.<sup>6</sup> As patients increasingly access information about their condition via modern technologies, we must ensure that this material is of good quality and that caregivers and healthcare professionals engage with patients to help them best use this information.<sup>6</sup>

## Adherence

Used interchangeably with compliance. The extent to which patients follow their antihypertensive medication schedules as prescribed by their primary care physicians.<sup>3</sup> Calculated by the days covered by available prescriptions.<sup>5</sup>

## Persistence

The overall duration of drug therapy.<sup>9</sup>

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DISCLOSURES: LR has served as speaker/advisor for Astra-Zeneca, Bayer, Daiichi-Sankyo, Medtronic, Inc., Novartis, Relypsa, Saint-Jude, Sanofi.

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