Compliance and the treatment of hypertension: where are we now?

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'The treatment (and control) of hypertension reduces cardiovascular risk and delays (or reverses) target-organ damage, where present.'

Hypertension is a major risk factor for cardiovascular disease, and is associated with significant target-organ damage, such as left ventricular hypertrophy, renal disease, ischemic heart disease and cerebrovascular disease [1]. The treatment (and control) of hypertension reduces cardiovascular risk and delays (or reverses) target-organ damage, where present. It is therefore of utmost importance that patients take their prescribed treatments regularly. Indeed, compliance with antihypertensive medications is one of the major factors that influences blood pressure control [2,3]. Of note, hypertensive patients often require more than one agent to control their blood pressure. These patients often have associated comorbidities, which increase the number of pills that they are receiving. However, the higher the number of pills to be taken, the lower the compliance with medications [4]. If drug compliance is poor, treatment effects are suboptimal and patients remain at risk of uncontrolled blood pressure and its complications.

Various methods have been advocated in improving patient compliance. Among those suggested include the use of fixed-dose combinations of drugs (to reduce the number of pills), the use of long-acting formulations or drugs (to limit the number of doses per day and, hence, the number of pills), using drugs with lower side-effect profiles, and various types of 'pillboxes'.

In this issue of *Therapy,* the ELECTRA (Estudio sobre la eficacia de Lercanidipino y el Cumplimiento del Tratamiento) study examines the effects on compliance of using an electronic pillbox along with a long-acting, well-tolerated antihypertensive drug [5]. In this study, more than 1500 hypertensive patients were treated with lercandipine (a long-acting calcium channel blocker), and randomized to 'usual care' or to have their treatment monitored with an electronic pillbox. Although the main aim of the electronic pillbox is to monitor drug usage, previous studies have demonstrated that its use also increases compliance. However, compliance with medication in this study was similar in the two groups and the authors felt that this was perhaps owing to the strict monitoring in the usual-care group. There were also similar blood pressure reductions in the two groups.

Not surprisingly, those with adverse reactions to the drug had poorer compliance with medications. As the rate of adverse events was similar in the two groups, the overall compliance was similar. This highlights the importance of monitoring adverse drug events during treatment, and the need to actively question patients regarding any problems with the drug, and change the drug as required, rather than asking the patient to persevere with drugs that they may not want to take. This is especially important in hypertension, where the disease itself is often asymptomatic. One must be aware of the scenario where we are often asking patients who are asymptomatic to take a pill(s) that makes them feel unwell and gives them side effects, with the hope that it may reduce their chance of a heart attack or a stroke in, perhaps, 10 years' time.

In the ELECTRA study, the follow-up period was only 12 weeks, and the possibility remains that compliance may fall after that, and use of the electronic pillbox may have made a difference in the long term. Indeed, an estimated 30–50% of hypertensive patients withdraw from their prescribed regimen within 1 year of diagnosis and, of the remainder, nearly 33% administer insufficient medication to lower their blood pressure to therapeutic levels [6,7].

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Was use of the electronic pillbox warranted? The electronic pillbox is a novel method of assessing patient compliance and is frequently

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used in studies that measure compliance [8,9]. However, its application also unintentionally makes the patient more compliant, as they know that it keeps an accurate record of their pill intake, and therefore they will not be able to cover up their compliance when they return for a check-up. It should also be noted that patients often perform better in clinical trials than in real life, owing to increased surveillance of their treatment.

Better drug compliance and adherence to prescribed management protocols means more effective disease management [10–13]. The implementation of proper compliance with medications, especially in hypertension, has major cost implications [14,15]. The financial burden due to the complications of hypertension, such as strokes or myocardial infarctions, are tremendous when compared with the small cost of an antihypertensive drug. It is, therefore, essential for physicians to try various options to increase compliance with antihypertensive medications. Using agents that are often well-tolerated, long-acting, once-a-day drugs, combination pills, strict monitoring of their compliance and patient education are all factors that would ultimately help in improving antihypertensive drug compliance, and therefore help reduce blood pressure and the burden that it causes. Things can only improve.

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