Recent large multi-centre studies have shown that treating hypertension in an older population is beneficial in reducing stroke, heart failure and all-cause mortality [1]. The immediate question that poses itself is whether there is a price to pay in terms of associated morbidity or even mortality arising from controlling high blood pressure (BP) to an extreme degree. Can lowering older people’s blood pressure too much result in postural (orthostatic) hypotension (OH) that can be potentially detrimental? And if the answer to that question is in the affirmative, what is the optimal or ideal level of BP that is beneficial but at the same time free from the associated adverse events of OH? We need large epidemiological studies to determine the prevalence of OH in older people in the community as well as in care home settings. The study by S. Ibrahim [2] is an attempt to establish the basic much-needed information in addressing this complicated area by quantifying the magnitude of the problem [2]. This study addressed the prevalence of OH in a large cohort of 3,775 females, mostly older women (mean age 68 years) over a 2-year period, and showed a high prevalence of OH of 28%. However, this study excluded almost half of the older population, namely older males. A similar recent study in Finland highlighted a higher prevalence of OH in 34% of community elderly people [3]. Both studies found an association of OH with the total number of regular medications taken [2, 3]. Although Shah’s study included women only, it was still in line with other epidemiological studies; the Finnish study found non-significant gender differences in the population studied with OH [3]. The prevalence of OH depends on the population studied and the definition used in quantifying the degree of OH. It may seem obvious that OH increases with age and co-morbidities, but such information from well-designed epidemiological studies is crucial in safely setting up health policies and guidelines for the management of high BP in the elderly while avoiding OH. Historically, the deleterious impact of systolic and diastolic hypotension and their prognostic indication of cardiovascular death have been extensively reported [4], and more recently in the Rotterdam study [5].

The pathophysiology of OH is multi-factorial. Common causes in the older population include dehydration, malnutrition, decrease in vestibular function, altered sympathovagal balance, cardiac structural and filling changes, and decreased baroreceptor response [6]. Baroreceptors may be affected by both persistent high blood pressure, explaining the relationship between OH and high systolic blood pressure readings [2, 7], and by decreased arterial compliance [8]. Common culprits causing OH are drugs such as tricyclic antidepressants, antihypertensives, diuretics, and vasodilating agents [9]. Whilst Shah et al. [2] found that the OH was more related to the number of antihypertensives than the agent used, other studies identified specific drugs [9], found no association [10] or even suggested a beneficial effect on postural blood pressure with certain antihypertensives [11].
We rarely diagnose OH in asymptomatic patients. Most clinicians do not routinely test for OH or take multiple BP readings in an outpatient setting. Furthermore, patients who are hypotensive or have a low-normal BP at home may have normal or even elevated readings in a clinic, where they are anxious or apprehensive (the ‘white coat hypertensive’ effect). It may be important to note that, in addition to the OH we pick up in outpatient clinic settings, there is an earlier form [12] and a delayed form [13] of OH. The latter can be found up to 45 min after standing in up to half of those patients that are ultimately diagnosed with OH [13].

What can we do to tackle such a problem in a heterogeneous population such as the elderly with so many co-morbidities and also subjected to so much polypharmacy? There are several different guidelines written for clinicians in how to measure and monitor BP such as the British Hypertension Society, the National Institute for Health and Clinical Excellence and the European Society of Hypertension, with slight variations between them, particularly in relation to recording postural BP changes. It can be helpful to take both multiple readings in the sitting position and to routinely record either a postural BP or, more simply, a standing BP reading in older patients, those people with multiple co-morbidities or in patients on several antihypertensive medications. Thinking about what drugs to use in treating high BP and the timing of administration is important. In view of the different forms of OH and the fact that it can be asymptomatic, further investigations such as ambulatory blood pressure monitoring with position sensors or tilt-table testing with phasic BP monitoring [14] may be useful for patients at higher risk of developing OH. Measuring arterial stiffness in these ‘high risk patients’ may also have a predictive role [8]. Having so many possible underlying aetiologies for OH, it may be very difficult to identify all patients at risk of OH. If at all possible, it may then be reasonable to group patients with different co-morbidities into age groups and to assign different BP targets according to their level of risk.

A specific issue relevant to the UK is the quality and outcomes framework (QOF) targets for which were introduced for general practitioners in 2004. It’s aim was to reward good practice for a wide range of achievement areas, including the management of hypertension. Practices score points according to their success in each clinical area, where more points lead to a higher financial reward. Achieving tight BP control for all patients irrespective of their co-morbidities and specific circumstances in order to meet targets will undoubtedly increase the incidence of OH. The benefits of aggressive blood pressure treatment on morbidity and mortality must therefore be carefully balanced with the potential hazards of orthostatic hypotension, such as falls and decreased organ perfusion, which may exacerbate cerebrovascular disease. Clinicians and researchers alike should appreciate the heterogeneity of the older population and the complexity of blood pressure control in them.

**References**