THE DATA FROM THE CENSUS in 2006 show that over 11% of the population of Ireland are over 65 years of age; more than half of these are likely to be hypertensive.1,2 The majority of these will not be aware of their hypertensive status and, of those who are, many will be sub-optimally treated.3 Hypertension is the most prevalent and strongest modifiable risk factor for stroke and has significant impact on cardiovascular and all-cause mortality and morbidity.4-7 Control of blood pressure may also be ‘cognitive’ protective though this is less clear.

Hypertension could be considered to be an ‘inevitable consequence’ of ageing. The Framingham Heart Study showed that 90% of patients who were normotensive at the age of 55 went on to develop systolic hypertension in later years.8 Moreover, this age-related rise in blood pressure was associated with distinct blood pressure patterns including a tendency toward rising systolic BP and decrease in diastolic BP with a consequent widening of pulse pressure.9 This change in pulse pressure reflecting ‘arterial stiffening’ has been shown to have particularly damaging effects on the macro and microvasculature of older patients, leading to cardiovascular mortality and morbidity.10

This important evidence is at variance with the belief a generation ago that isolated systolic hypertension was a ‘normal’ consequence of ageing and therefore did not require intervention. There is now robust evidence to show that treatment of isolated systolic hypertension decreases the risk of mortality from stroke and cardiovascular disease.11,12

There is general agreement amongst most guidelines that treatment should be initiated where BP is found to be consistently above 140/80.13,14 Decision to treat at lower levels is influenced by the presence of additional vascular risk factors such as diabetes, renal failure and established cardiovascular disease and the tolerability of lower blood pressure for older people.

While the optimal treatment goal is not clearly defined, a blood pressure of < 140/80 is generally considered acceptable in the older population and a target of 130/80 is desirable in patients with diabetes or established cardiovascular disease.

Treatment should involve lifestyle measures including weight-loss, smoking cessation and dietary sodium reduction in addition to pharmacotherapy.15 There is good evidence for increased fruit and vegetables in the daily diet and the beneficial effects of a ‘low or no added salt diet’ as anti-hypertensive measures, and numbers needed to treat (NNT) are as low as four over 30 months in keeping one additional patient free from cardiovascular events and high blood pressure.16

Promoting lifestyle changes can be challenging in older patients, however. Weight-loss is less likely to be a significant factor, may increase frailty if over-zealously done and capacity for physical exercise is often compromised anyway.
Both age-related loss of taste and a reliance on ready-prepared meals tend to increase sodium intake inadvertently. Similarly, limited access to shopping and poor dentition may limit fruit and vegetable intake. In all cases however, older patients (and their carers) should have a access to tailored advice on diet and exercise programmes and all patients should be encouraged with smoking cessation.

A large proportion of older patients will have multiple vascular risk factors and evidence of end organ damage at presentation, and therefore control of hypertension is a priority.

Treatment of hypertension in older adults often poses a therapeutic challenge, however. Firstly, many older patients will have difficulty in managing hypertension and may require several agents to control BP to target. Secondly, patients in this category are often susceptible to orthostatic and post-prandial hypotension due to decreased sympathetic responsiveness, baroreceptor insensitivity and impaired cerebral auto-regulation. This ‘autonomic failure’ is often exacerbated by anti-hypertensive agents and up to 30% of older people experience postural symptoms. Thirdly, side-effects of a particular class of anti-hypertensive are more likely to be troublesome in older patients and ‘cautions’ in prescribing are more necessary.

Thiazide diuretics have ‘stood the test of time’ when it comes to treatment of systolic hypertension and have shown consistent benefit in end-point reduction in trials. However, thiazide diuretics have been associated with development of diabetes, and hyponatraemia is a frequent problem, the risk of which rises with age (x 10 > 65 years; x 16 > 75 years), is more common in older females and in association with other agents (NSAIDs, SSRIs etc). There can often be a delayed complication (37% cases occur after one year), making monitoring difficult. Most other classes of anti-hypertensive drugs have also shown benefit in older patients. A number of comparative trials between ‘older’ and ‘newer’ classes of anti-hypertensives have been carried out. A comparison of a thiazide (chlorthalidone) versus ACE inhibitor and calcium channel blocker showed a trend in the ASCOT study where ‘older’ patients had a more beneficial response in comparison with other agents (NSAIDs, SSRIs etc). This difference was subsequently found in the ASCOT study where ‘older’ patients showed a more beneficial response compared to younger patients. A large proportion of older patients will have multiple vascular risk factors and evidence of end organ damage at presentation, and therefore control of hypertension is a priority.

Treatment of hypertension in older adults often poses a therapeutic challenge, however. Firstly, many older patients will have difficulty in managing hypertension and may require several agents to control BP to target. Secondly, patients in this category are often susceptible to orthostatic and post-prandial hypotension due to decreased sympathetic responsiveness, baroreceptor insensitivity and impaired cerebral auto-regulation. This ‘autonomic failure’ is often exacerbated by anti-hypertensive agents and up to 30% of older people experience postural symptoms. Thirdly, side-effects of a particular class of anti-hypertensive are more likely to be troublesome in older patients and ‘cautions’ in prescribing are more necessary.

Thiazide diuretics have ‘stood the test of time’ when it comes to treatment of systolic hypertension and have shown consistent benefit in end-point reduction in trials. However, thiazide diuretics have been associated with development of diabetes, and hyponatraemia is a frequent problem, the risk of which rises with age (x 10 > 65 years; x 16 > 75 years), is more common in older females and in association with other agents (NSAIDs, SSRIs etc). There can often be a delayed complication (37% cases occur after one year), making monitoring difficult. Most other classes of anti-hypertensive drugs have also shown benefit in older patients. A number of comparative trials between ‘older’ and ‘newer’ classes of anti-hypertensives have been carried out. A comparison of a thiazide (chlorthalidone) versus ACE inhibitor and calcium channel blocker showed a trend in favour of chlorthalidone (ALLHAT study). The converse was subsequently found in the ASCOT study where ‘older’ atenolol-based regimens appeared less efficacious than ACE/ARB or calcium channel-based regimens, but levels of blood pressure control, inadequate follow-up time and different populations probably account for at least some of this contradictory finding.

What is consistent is the risk of stroke and cardiovascular disease rises with both diastolic and systolic blood pressure (risk of stroke approximately doubles with every 7.5 mmHg rise in diastolic blood pressure over its physiological range for example). The ‘best’ anti-hypertensive agent is probably the one that lowers blood pressure and is tolerated by patients.

Consideration of co-morbidity, co-pharmacy and compliance when prescribing a class of anti-hypertensive and the adage of ‘go low and slow’ is a sensible approach. Choice of agent should be tailored to the individual and BP should always be checked in both the supine and erect positions on follow up.

In light of the significant benefits of anti-hypertensive therapy in a reduction in cardiovascular mortality and in particular stroke risk reduction, blood pressure should be monitored and treated to target in older patients. Treatment goals in the older person should be the same as for the younger population.

Treatment involves both lifestyle and pharmacotherapy and should be tailored to the individual and reviewed regularly to ensure maximum benefit with minimum adverse effects. Trials have consistently shown that such goals are realistic and achievable so long as blood pressure control is seen as a priority by doctors and their older patients.

Marie Therese Lonergan is a registrar in geriatric medicine and Ronan Collins is a consultant in geriatric/stroke medicine at Tallaght Hospital, Dublin.

References