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CARDIOPULSE

Impact of the new USA and ESC/ESH HTN guidelines for Spain

Arterial hypertension (HTN) constitutes the primary cause of premature death and contributes importantly to the development of myocardial infarction, heart failure, stroke, and chronic kidney disease on earth.[1] For the Spanish population, the control of HTN is determinant to diminish cardiovascular disease, the major cause of death in our country. Meanwhile, blood pressure (BP) control will reduce the progression of many forms of renal disease which lead to the very costly programmes of dialysis and kidney transplant.

Arterial HTN (>140/90 mmHg or current antihypertensive drug treatment) is present in 33.1% of the Spanish population according to the Nationwide Population-Based Study published in 2012.[2] At that time, 59.4% were aware of their condition and 78.8% of them were treated. In total, 48.5% of those aware and treated were controlled (22.7% of all hypertensives).

These figures were considered inadequate at that time for a country where nearly 100% of the population receives practically free, adequate medical attention provided by an excellent healthcare system. Improvement of the apparently inadequate situation first required an educational programme convincing the population that measurement of BP in appropriate conditions, and secondly that measurement of BP principally by primary care doctors in any visit promoted by any circumstance must be performed.

Since then we have enabled an improvement in BP control in the attending population reaching a prevalence of 60%,[3] attributable to a relevant increase in the use of fixed combinations of two and three drugs.[4] On the other hand, new ways to improve the detection of arterial HTN in the 40% who were not aware of its presence have been developed through adequate measurement of BP primarily in pharmacies[5,6] and in labour medicine.[7]

As a consequence of the previous data, when the new guidelines arrived in Spain in 2018 there was still a need to identify the important percentage of unaware patients, and the approximate 30% of treated hypertensives that remained uncontrolled.

Acceptance of the ACC/AHA Guidelines instead of ESC/ESH Guidelines would increase the prevalence of HTN from 33.1% to 46.9%. In other words, we should need to treat 5.3 million more hypertensives and in 1.4 million new pharmacological treatment should be started.[8] In Spain, doctors mostly follow the ESC/ESH Guidelines, therefore, the amount of work added to what is already required is going to be lower. However, in the cohort of patients from the Spanish Ambulatory BP Monitoring (ABPM) Registry included in the recent publication of ABPM and mortality,[9] unpublished data showed that following the previous ESC/ESH Guidelines 34.4% exhibited BP values <130/80 mmHg, but it did not correspond exclusively to people <65 years of age, while those remaining between 130 and 139/80 and 89 mmHg were mostly younger. It indicates that in the great majority of treated patients <65 years of age an increase in pharmacological treatment is required to attain the expected goal of BP <130/80 mmHg. Conversely, in patients >65 years of age with the exception of a relatively small percentage attaining values below the expected goal, an increment in pharmacological treatment will also be required. All this means that a significant increase in the amount of work will be required to accomplish the BP goals recommended by the new Guidelines.

An important aspect of BP control considered in both new Guidelines is the relevance of out-of-office BP measurement to verify an adequate diagnosis of HTN and the adequacy of treatment. This type of measurement also contributes to diagnose the risk phenotypes defined by ABPM and/or Home BP Monitoring namely, white coat hypertension, white coat uncontrolled hypertension (WUCH) masked hypertension (MH) and masked uncontrolled hypertension (MUCH).[10] An adequate treatment of these phenotypes is not appropriately included in the actual Guidelines and will require to be included in the future.

In Spain, 77.4% of primary care doctors are provided with devices to measure out-of-office BP and 49% have an ABPM device at their disposal.[11] An adequate use of out-of-office BP showed in the first article of the ABPM Registry published in 2007 that good BP control during daytime was present in 51.6% compared with 23.6% in the office.

Therefore, in primary care in Spain to discard WUCH, MH, and MUCH can be easier in primary care contributing to a clear increase in the percentage of good control in treated and untreated hypertensives.

In order to perform an appropriate management of BP, as recommended by the new ESC/ESH Guidelines, an adequate educational programme directed to the population, to primary care doctors, to pharmacies, and to doctors working in labour medicine is required.

This is the objective of the Council of the Spanish Society of Hypertension, which considers that an adequate Continuing Medical Education (CME) programme explaining the general content of the new guidelines, while supporting the need for an early and aggressive BP control together with a practical explanation on how to apply the devices for out-off-office BP measurement is required.

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References

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The UK National Amyloidosis Centre

The National Amyloidosis Centre at the Royal Free Hospital and University College London is the world's largest amyloidosis centre with almost 1500 patient referrals annually

The National Amyloidosis Centre (NAC) is a wholly integrated clinic and research facility located in the Royal Free Hospital and University College London (UCL). The NAC has been at the cutting edge of research and treatment into all aspects of amyloidosis for over 30 years, and since 1999 has been commissioned by the UK National Health Service to deliver a national highly specialized clinical service.

Research in the centre ranges from molecular, genetic, biochemical, physiological, experimental, and pathologic investigations through to new clinical diagnostics, improved patient management and drug discovery. There are extensive collaborative links with scientists, clinicians, and industry in many of these areas. The core research mission is to elucidate fundamental pathobiological mechanisms in order to improve diagnosis, management, and outcome of amyloidosis. The centre has further interests in autoinflammatory diseases as well as the major common diseases associated with local amyloid deposition: Alzheimer's disease and Type 2 diabetes mellitus.

The multidisciplinary clinical service is delivered by specialists in rheumatology, immunology, nephrology, neurology, and cardiology. Development and refinement of clinical imaging to enable non-invasive diagnosis, quantitation, and monitoring of amyloid has been a constant theme over the decades, notably including I^{123}-labelled serum amyloid p (I^{123}-SAP) scintigraphy (*Figure 1*),[1] cardiac ^{99m}Tc-3,3-diphosphono-1,2-propanodicarboxylic acid scintigraphy,[2] and multiparametric cardiovascular magnetic resonance (CMR)[3] (*Figure 2*).

The NAC's amyloidosis practice is the world's largest and most diverse, with a current referral rate of 1, 400 new patients per year from the UK and internationally. The clinical service dates back to 1987 when Professors Sir Mark Pepys and Professor Philip Hawkins developed I^{123}-SAP scintigraphy for the diagnosis of amyloidosis.[1] The I^{123}-SAP scintigraphy tracer localizes quantitatively to amyloid deposits throughout the body producing diagnostic images in patients with systemic amyloidosis; follow-up whole body scans quantitatively track amyloid burden in solid viscera.[4] Contrary to previous expectations, I^{123}-SAP scintigraphy has systematically shown that amyloid deposits exist in a state of dynamic turnover, and that they gradually regress in many patients in whom the underlying cause is suppressed (*Figure 1*).[4]

I^{123}-labelled serum amyloid p scintigraphy has been a core investigation in patients attending the NAC for 32 years, with more than 35 000 scans having been performed. Systemic demonstration of amyloid regression following treatment that suppresses production of the respective amyloid fibril precursor proteins in AA, light chain (AL), and various other types of amyloidosis has greatly encouraged much more active approaches to therapy, including cytokine blocking anti-inflammatory treatment and novel chemotherapy in acquired AA and AL amyloidosis, respectively, to liver transplantation in hereditary amyloidosis, and most recently highly effective small interfering RNA and antisense oligonucleotide gene silencing therapies in familial forms of transthyretin (ATTR) amyloidosis.

ATTR amyloidosis was until recently considered to be a rare and untreatable cause of heart failure in older people, diagnosis of which required invasive endomyocardial biopsies. Research at NAC led by Professor Julian Gillmore has shed important insights into its pathogenesis and genetic susceptibility; validated non-biopsy diagnosis using repurposed bone scintigraphy, a widely available medical imaging technology[2]; elucidated the clinical phenotype and natural history of the disease; and in collaboration with Alnylam Pharmaceuticals Inc. and Akcea Therapeutics Inc. has contributed to development of novel highly effective gene silencing therapies that have lately entered the