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EDITORIAL

Calcium Channel Blockers for the Clinical Management of Hypertension

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Current European guidelines recommend to start antihypertensive therapy with either monotherapy in those individuals with grade 1 hypertension and low-to-moderate global cardiovascular risk profile, or with dual combination therapies in those patients with grade 2–3 hypertension or high-to-very-high global cardiovascular risk profile [1]. In both cases, physicians' choice regarding antihypertensive drug classes should be limited to the following ones: angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), calcium channel blockers (CCBs), beta-blockers (BBs) and diuretics, which are currently recommended as first-line therapy [1]. Although it is stated that there is a substantial equivalence among classes in terms of antihypertensive effectiveness and cardiovascular protection [2], there are also numerous studies demonstrating clinically relevant differences in terms of safety and tolerability [3–5], as well as effects on organ damage [6, 7] and metabolic abnormalities [8, 9]. In addition, several clinical studies and post hoc analyses from randomized clinical trials performed in hypertensive patients at different cardiovascular risk profile have consistently demonstrated favourable clinical properties of drugs inhibiting the renin-angiotensin system, i.e. ACE inhibitors and ARBs, and CCBs in terms of metabolic abnormalities and improved vascular function compared to antihypertensive therapies based on either BBs or diuretics or both [10–12].

All these aspects should be taken into account when prescribing antihypertensive medications in patients with sustained high blood pressure levels, since treated uncontrolled hypertension is persistently responsible of the vast majority of the burden of cardiovascular diseases in various countries, including Italy [13]. In particular, one neglected aspect of the antihypertensive therapy is the consideration on tolerability profile, i.e. the potential risk of experiencing drug-related side effects or adverse reactions of a given antihypertensive strategy, both in monotherapy and in combination therapy. Several observational studies, in fact, reported that about half of treated hypertensive patients spontaneously interrupted prescribed medications after 1 year of treatment, and this was largely independent of the baseline blood pressure levels and the achievement of blood pressure control [10–12]. Yet, drug discontinuations are often related to safety or tolerability issues, beyond the clinical effectiveness of a specific antihypertensive therapy.

On the basis of these considerations, not only the choice of a preferred antihypertensive drug class, but also the selection of specific compounds within the same class of antihypertensive drugs may have potential clinical impact, in view of the different pharmacokinetic and pharmacodynamic properties, as well as the different tolerability profile among various compounds. As an example, within the class of CCBs, different formulations of nifedipine, one of the most commonly prescribed dihydropyridinic CCB for treating hypertension, may have potentially harmful side effects on heart rate when used in short-lasting formulation, whereas it may provide prolonged blood pressure lowering reductions when used in gastrointestinal therapeutic system.

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In this issue of High Blood Pressure & Cardiovascular Prevention, a comprehensive overview of the beneficial effects of dihydropyridinic CCBs for the clinical management of hypertension and associated clinical conditions is provided [14]. This work originates from an educational program performed in Italy in 2016, and devoted to different professional figures involved in the clinical management of hypertension. The program, entitled THYPER evolution, was aimed at improving the clinical management of hypertension and ameliorating blood pressure control rates by adopting rational, effective and well-tolerated antihypertensive drug therapies, with a particular focus on the use of the CCB barnidipine.

Among others, some specific aspects of this review should be discussed. First of all, it has been highlighted that the available evidence support the use of CCBs as first-line strategy, both in monotherapy and in combination therapies, mostly in association with either ACE inhibitors or ARBs. Such approach has demonstrated to provide effective and sustained blood pressure reductions over the entire 24-h period in different categories of hypertensive patients, and, mostly, to ensure high level of safety and tolerability. In particular, barnidipine-based antihypertensive therapy has proven to be safe, effective and well tolerated, with a lower incidence of side effects (e.g. ankle oedema) [15–18]. These properties may allow lower rates of discontinuations and promote the achievement of higher rates of blood pressure control in treated hypertensive patients. Secondly, it has been also discussed the beneficial effects provided by barnidipine in terms of hypertension-related cardiac and vascular organ damage, which have been observed in hypertensive patients with left ventricular hypertrophy and impaired vascular function (i.e. endothelial dysfunction) [19–23]. Finally, the use of CCBs has demonstrated to significantly reduce the risk of major cardiovascular and cerebrovascular complications, thus reducing the burden of hypertension-related diseases [24–33].

In conclusion, the choice of CCBs can be considered a safe, effective and well-tolerated option for ameliorating the clinical outcomes in hypertensive patients at different risk profile. These drugs, in fact, have demonstrated to provide greater and more sustained blood pressure reductions compared to other drug classes of antihypertensive agents, both in monotherapies and in combination therapies. Within the CCB class, the choice of barnidipine may further promote the achievement of the recommended blood pressure targets in different categories of hypertensive patients, including elderly and high risk individuals, with a favourable metabolic profile and excellent tolerability.

Compliance with Ethical Standards

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