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# **Blood pressure and LDL-cholesterol control in patients with primary hypertension is far from optimal: results from a large observational, multicentric, prospective study**

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**Background:** Blood pressure (BP) and LDL-cholesterol control worldwide is still suboptimal. New European and American guidelines have introduced more strict recommendations regarding BP and LDL-cholesterol goals, but data of how difficult is to reach them in routine clinical practice is missing. Triple combination (preferably in a single pill) has been recommended as the 2nd step for the BP control, but data on its efficacy and treatment adherence is limited.

**Purpose:** To assess BP control at baseline, and after 6 months of optimized treatment with a single pill triple combination (of perindopril, amlodipine, and indapamide), and to assess associated risk factors control and treatment adherence.

**Methods:** In an observational, multicentric, prospective study, involving 209 investigators, we included 2077 patients (62±10 years; 49% men) with primary hypertension, in sinus rhythm, on current treatment with a single pill triple combination for at least one month prior to inclusion. General characteristics, cardiovascular risk factors, concomitant diseases, concomitant medications, fixed triple combination dosage, and adherence score were collected at baseline (V1), one month (V2), and 6 months (V3). Standardized office BP was measured with a single type sphygmomanometer, at each visit. Lipid profile was collected, if available. At V1 and V2, non-pharmacological and pharmacological treatment was optimized, according to the current guidelines.

**Results:** At baseline, BP control was suboptimal: only 37% of patients (38% of non-diabetic and 33% of diabetic patients) had optimal BP control as per ESC guidelines 2013, whereas only 10% of patients (11% of non-diabetic and 10% of diabetic patients) had optimal BP control as per ESC guidelines 2018. However, after 6 months of optimized treatment, 75% of patients (78% of non-diabetic and 67% of diabetic patients) had optimal BP control as per ESC guidelines 2013, while 33% of patients (33% of non-diabetic and 33% of diabetic patients) had optimal BP control as per ESC guidelines 2018. At baseline, despite that 52% of patients were on a statin, only 12% of patients at very high cardiovascular risk had an LDL-cholesterol <70 mg/dl, while only 25% of patients at high cardiovascular risk had an LDL-cholesterol <100 mg/dl; at 6 months, 13% of patients at very high cardiovascular risk had an LDL-cholesterol <70 mg/dl, while 30% of patients at high cardiovascular risk had an LDL-cholesterol <100 mg/dl. Single pill triple combination dose was increased at V1 in 29% of patients, and at V2 in 7% of patients. Adherence score increased from 7.0±1.6 at V1 to 7.4±1.1 at V3 (p<0.001).

**Conclusion:** BP control and LDL-cholesterol control, according to the new guidelines, is far from optimal. However, by optimizing non-pharmacological treatment and increasing dosing and adherence of a single pill triple combination, BP control can be markedly improved.