

## Antihypertensive drugs and their combination in Diabetes Mellitus

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Nowadays, a huge section of worldwide population suffers from Diabetes mellitus (DM) and this proportion is expected to increase in coming years. More than half, that have Diabetes mellitus, have also, Arterial hypertension (HTN). DM raises the cardiovascular risk and is the main cause of chronic kidney failure final stage and blindness in adults. The co-existence of DM and HTN multiplies and accelerates the risk of micro- and macro-vascular complications. Consequently, the need for optimal control of DM and simultaneously of HTN, is imperative. The data of plenty clinical trials revealed the benefit of the excellent regulation of Blood Pressure (BP) in individuals with DM. Therefore the American Diabetes Association, the European Society of Hypertension, the European Society of Cardiology and the American Heart Association determined the target values of ideal BP. BP targets have to be lower than  $<140/90$  mmHg, and values approaching  $130/80$  mmHg should be recommended. However, evidence in favour of even lower systolic values, i.e.  $<130$  mmHg, is limited and is definitively against a reduction to  $<120$  mmHg. According to the results of recent studies, the target of BP remains a difficult goal, since the percentage of the successful regulation of BP is very low.

The therapeutic approach of HTN in individuals with DM includes lifestyle modifications and pharmacological interventions. Potentially, the administration of any antihypertensive drug is acceptable, as long as the therapy is personalized for the patients and their co-morbidities. Certainly the medication necessary comprise a blocker of the renin-angiotensin system, videlicet an inhibitor of angiotensin converting enzyme (ACE-I) or an antagonist of type-1 angiotensin II (ARB).

The ideal antihypertensive agents for patients with DM, should not interfere with metabolism, prevent the onset of hypoglycaemia, do not cause orthostatic hypotension, nor aggravate dyslipidemia, peripheral vascular disease, coronary artery disease or sexual dysfunction.

According to recent studies in individuals with DM, the BP target is achieved by the use of 2 to 3 antihypertensive drugs on average. This fact highlights the need to use potent combinations of antihypertensive drugs. In addition, the use of antihypertensive drugs

combination reduces the BP more directly and effectively. Furthermore, the drug combination, due to the synergy of the active substances by different mechanisms of action, reduces the adverse effects of

drugs, while lower dosages are required. Moreover, the combination of drugs in ready, fixed doses, leads to better patient compliance in treatment, while reducing the cost of treatment.