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THE EFFECTIVITY AND SAFETY OF LERCANIDIPINE: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Objectives: We aimed to determine effectivity and safety of lercanidipine as monotherapy compared with commonly used drugs or placebo and as combination therapy among patients with mild to moderate hypertension.

Methods: We performed meta-analysis by using PRISMA guideline. We searched the literature in electronic database; Pubmed, Clinical Key, Wiley Online Library, and Science Direct until September 12, 2019. We included all RCTs investigating the effectivity and safety of lercanidipine in adults with primary hypertension (SBP \geq 140 -179 mmHg and DBP \geq 90-109 mmHg) without other significant comorbidities. Primary outcomes were mean reduction in SBP and DBP that we assumed as an effectivity endpoints and incidence of adverse events as a safety outcomes.

Results: Fourteen RCTs (11 RCTs comparing lercanidipine as monotherapy and 3 RCTs comparing lercanidipine as combination therapy to monotherapy) enrolling 3557 patients were included in this study. As monotherapy, lercanidipine was not different to other drugs in reducing SBP and DBP (SMD 0.00[-0.19,0.20 95%CI] ($p=0.98$) and SMD 0.06[-0.25,0.37 95%CI] ($p=0.69$), respectively). As combination therapy, lercanidipine was proven more effective in reducing SBP and DBP (SMD -0.43[-0.63, -0.24 95%CI] ($p<0.00001$) and SMD -0.53[-0.86,-0.20 95%CI] ($p=0.001$), respectively). Adverse events were less frequent in lercanidipine group.

Conclusions: Lercanidipine was not superior in reducing BP as monotherapy but it caused less adverse events. Lercanidipine was better used as combination therapy than monotherapy.

Figure 1. Forest Plot

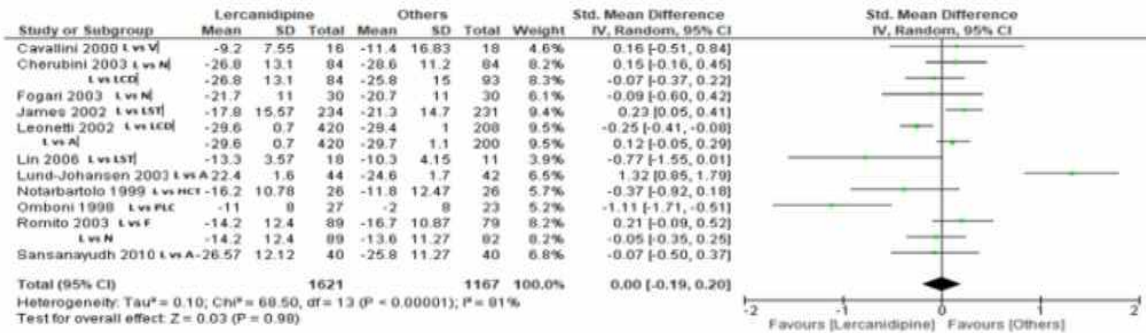


Figure 1 Mean reduction of SBP in hypertensive patients treated with lercanidipine compared to commonly used drugs

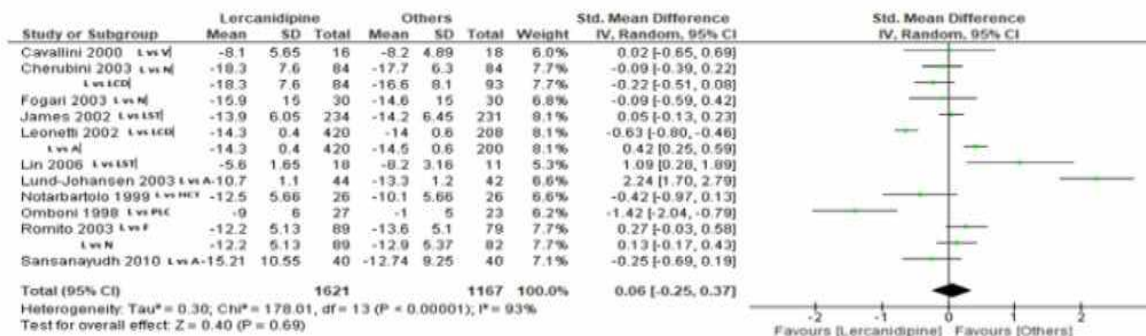


Figure 2 Mean reduction of DBP in hypertensive patients treated with lercanidipine compared to commonly used drugs

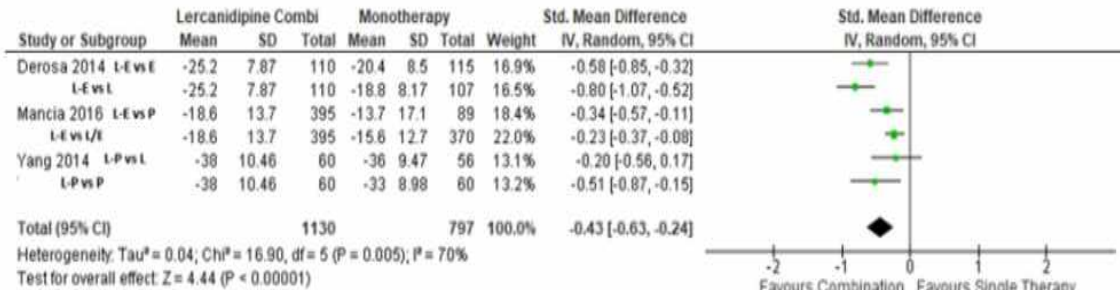


Figure 3 Mean reduction of SBP in hypertensive patients treated with lercanidipine as combination therapy compared to monotherapy

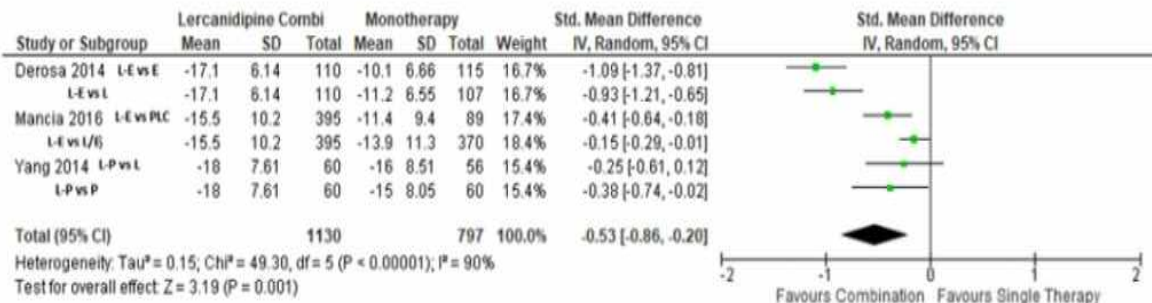


Figure 4 Mean reduction of DBP in hypertensive patients treated with lercanidipine as combination therapy compared to monotherapy