

عنوان مقاله:

Effect of Amlodipine in Comparison to Nifedipine on Vascular Perfusion Pressure of Isolated Rat Kidney

محل انتشار:

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خلاصه مقاله:

Objective(s) This study aimed to investigate and to compare the effects of nifedipine and amlodipine, dihydropyridine (DHP) calcium channel blockers (CCBs) on perfusion pressure of isolated perfused rat kidney. **Materials and Methods** Following the establishment of renal perfusion with a constant baseline pressure of ۸۵-۹۵ mmHg, the renal vasculature was constricted by phenylephrine (PE) injection. Changes in the baseline perfusion pressure were recorded. Then nifedipine and amlodipine prepared in perfusion medium was fed to the kidney for ۳۰ min. Finally alterations in the baseline pressure arising from PE administrations in the presence of CCBs were recorded and data analyses were done. **Results** PE-induced increases in perfusion pressure attenuated significantly in the presence of ۵ and ۱۰ pM of nifedipine and ۱، ۵، and ۱۰ pM of amlodipine. Increases in perfusion pressure arising from PE (۱۰۰ and ۲۰۰ pM) in the presence of amlodipine (۱، ۵، and ۱۰ pM) was significantly less than that in the presence of nifedipine (۱، ۵، and ۱۰ pM). Calculated EC₅₀ value of amlodipine for inhibition was significantly lower than that of nifedipine. Based on the EC₅₀ values, the potency of amlodipine in inhibiting PE-induced responses is significantly higher compared to nifedipine. **Conclusion** The potency of amlodipine in inhibiting PE-induced increments in renal perfusion pressure is significantly higher compared to nifedipine.

کلمات کلیدی:

Amlodipine, Isolated rat kidney, Nifedipine

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