البحث الثامن

العنوان:

Effect of saxagliptin and vardenafil on cardiac dysfunction and atrial natriuretic peptide gene expression in chronic isoproterenol - treated rats

مكان و تاريخ النشر :

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Abstract:

The purpose of this study was to clarify the potential cardioprotective effect of saxagliptin and vardenafil on isoproterenol-induced cardiac dysfunction. Rats were injected subcutaneously with isoproterenol as follows: doses of 30, 20, and 10 mg/kg were given on days 1, 2, and 3, respectively, followed by 5 mg/kg on days 4 to day 15. Rats received vehicle, saxagliptin (10 mg/kg) or vardenafil (10mg/kg) orally with isoproterenol to study their effects on electrocardiogram data, cardiac contractility, atrial natriuretic peptide and tumor necrosis factor α gene expression as well as histopathological analysis of cardiac tissue. Results showed that isoproterenol induced ECG changes were restored to normal by both drugs. Repeated administration of isoproterenol significantly decreased cardiac contractility by 63.62% that was increased by 53.9% with saxagliptin and by 125% with vardenafil treatment. Both treatments significantly decreased ANP and TNFα gene expression that was increased by isoproterenol injection. Histopathological examination revealed that pretreatment with either drugs led to improvement of isoproterenol- induced inflammation and vaculation and ameliorated myocardial fibrosis. In conclusion, results implicate that both saxagliptin and vardenafil may prevent isoproterenol induced cardiac dysfunction and further experimental studies are required to elucidate their potential cardioprotective mechanisms and assess their efficacy in treatment of heart failure.