

عنوان مقاله:

ACE γ /Ang-(γ - γ)/MAS axis effects on cardiovascular and renal system : A narrative review

محل انتشار:

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خلاصه مقاله:

Introduction: Classic Renin-Angiotensin System (RAS) activation may induce deleterious effects leading to various cardiovascular pathologies, such as hypertension, endothelial dysfunction, uncompensated heart failure, vasoconstriction, sodium and water retention, inflammation, fibrosis, and the generation of reactive oxidative species in kidney disease. Recent studies have unveiled a new member of RAS, Angiotensin-(γ - γ) [Ang-(γ - γ)], which exerts its influence via the Mas receptor and is synthesized by Angiotensin Converting Enzyme γ (ACE γ), utilizing Angiotensin II as a substrate to produce Ang-(γ - γ). It has been demonstrated that Ang-(γ - γ) inhibits the ACE/ANGII/AT γ R axis, imparting antithrombotic, antifibrotic, anti-inflammatory, and antiproliferative effects. In this study, we conducted a literature review to investigate whether ANG-(γ - γ) exhibits discernible effects on renal and cardiovascular systems. **Methods:** We searched PubMed, selecting 155 articles related to Ang-(γ - γ) and its effects on body systems. Of these, 37 articles were relevant to our study, excluding 4 articles that did not directly discuss the ACE γ /Ang-(γ - γ)/Mas axis. **Results:** Ang-(γ - γ), by inhibiting classic RAS, reduces the risk of atherosclerosis, diabetic neuropathy, and glomerulonephritis, possibly by blocking the fibrosis pathway and reducing TGF- β . The ACE γ /Ang-(γ - γ)/Mas axis might significantly contribute to cardiovascular disease. Oral administration of Angiotensin γ - γ , included in cyclodextrin [Ang-(γ - γ)-CyD], resulted in a reduction of infarcted areas of the heart. According to these studies, it exerts this protective role by increasing the impact of bradykinin on coronary vessel dilation, reducing norepinephrine release, and regulating growth remodeling mediated through the Mas receptor via G protein signaling. **Conclusion:** Angiotensin γ - γ exhibits inhibitory effects on the detrimental actions of Ang II. Through experiments conducted on rats, it demonstrated cardioprotective, anti-inflammatory, and anti-necrotic effects. Moreover, it displayed nephroprotective effects and played a role in the regulation of ions and electrolytes.

کلمات کلیدی:

Angiotensin-(γ - γ), renin-angiotensin-system, Mas receptor, Cardioprotective, nephroprotective

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