

Function of Angiotensin-Converting Enzyme Inhibitors on Heart Diseases

Kosmas Saba*

Department of Vascular Surgery, Central Clinic of Athens, Athens, Greece

DESCRIPTION

Angiotensin-Converting Enzyme (ACE) inhibitors are a class of medications that are used to treat high blood pressure and heart failure. They work by inhibiting the activity of angiotensin-converting enzyme, which plays a role in the regulation of blood pressure and fluid balance in the body.

Mechanism of action

Angiotensin-Converting Enzyme (ACE) inhibitors work by blocking the activity of the angiotensin-converting enzyme, an enzyme that converts angiotensin I to angiotensin II. Angiotensin II is a hormone that constricts blood vessels, leading to an increase in blood pressure. By blocking the conversion of angiotensin I to angiotensin II, ACE inhibitors reduce the constriction of blood vessels.

ACE inhibitors also decrease the secretion of aldosterone, a hormone that promotes sodium and water retention, leading to an increase in blood volume and blood pressure. By inhibiting aldosterone secretion, ACE inhibitors reduce blood volume and lower the blood pressure.

Uses

Some of the uses of angiotensin-converting enzyme on various diseases

Hypertension: Hypertension, or also called high blood pressure, is a common condition in which the blood pressure of the heart gets increases. It is a major risk factor for heart disease, stroke, and kidney disease. ACE inhibitors are often used as a first-line treatment for hypertension because of their effectiveness and tolerability. They are particularly effective in treating hypertension in patients with diabetes or chronic kidney disease.

Heart failure: Heart failure is a condition in which the heart is unable to pump blood effectively. It can result from a variety of causes, including hypertension, coronary artery disease, and valvular heart disease. ACE inhibitors are commonly used in the treatment of heart failure because they improve the heart's pumping function and reduce the pressure on the heart.

Diabetic nephropathy: Diabetic nephropathy is a common complication of diabetes that affects the kidneys. It is characterized by damage to the small blood vessels in the kidneys, which can lead to kidney failure. ACE inhibitors are used to slow the progression of diabetic nephropathy by reducing the pressure in the kidneys.

Cardiovascular disease: ACE inhibitors may also be used to reduce the risk of heart attack and stroke in patients with a history of cardiovascular disease. They can help to improve blood flow to the heart and reduce the risk of blood clots.

Side effects

ACE inhibitors can cause side effects as any other drugs. The quite common side effects of ACE inhibitors are,

Cough: ACE inhibitors can cause a dry, persistent cough in some patients. This may be caused due to the accumulation of bradykinin, a peptide that is broken down by ACE.

Hypotension: ACE inhibitors can cause a decrease in blood pressure, especially in patients who are dehydrated or have low blood volume.

Hyperkalemia: ACE inhibitors can cause an increase in potassium levels in the blood, which can be dangerous in patients with kidney disease.

Angioedema: ACE inhibitors can rarely cause angioedema, which is a swelling of the face, lips, tongue, or throat. This is a potentially life-threatening side effect that requires immediate medical attention.

Rash: Some patients may develop a rash or itching while taking ACE inhibitors.

Taste disturbances: Some patients may experience changes in their sense of taste while taking ACE inhibitors.

CONCLUSION

Before starting treatment with ACE inhibitors, it is important to discuss with the doctor about the medical history and even about any medications that are taken by the patient previously.

Correspondence to: Kosmas Saba, Department of Vascular Surgery, Central Clinic of Athens, Athens, Greece, E-mail: ksmsaba@hotmail.com

Received: 03-Mar-2023; **Manuscript No.** AOA-23-23107; **Editor assigned:** 06-Mar-2023; **PreQC.** No. AOA-23-23107 (PQ); **Reviewed:** 20-Mar-2023; **QC.** No. AOA-23-23107; **Revised:** 27-Mar-2023; **Manuscript No.** AOA-23-23107 (R); **Published:** 03-Mar-2023, DOI: 10.35248/2329-9495.23.S1.005

Citation: Saba K (2023) Function of Angiotensin-Converting Enzyme Inhibitors on Heart Diseases. Angiol Open Access. S1:005.

Copyright: © 2023 Saba K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ACE inhibitors may not be safe or appropriate for everyone, especially in patients with a history of, kidney disease and liver disease. ACE inhibitors can worsen kidney function in patients

with pre-existing kidney disease, and can also increase the risk of liver damage in patients with liver disease.