Aprocitentan: A Novel Approach to Treating Resistant Hypertension

Presented by PhD student

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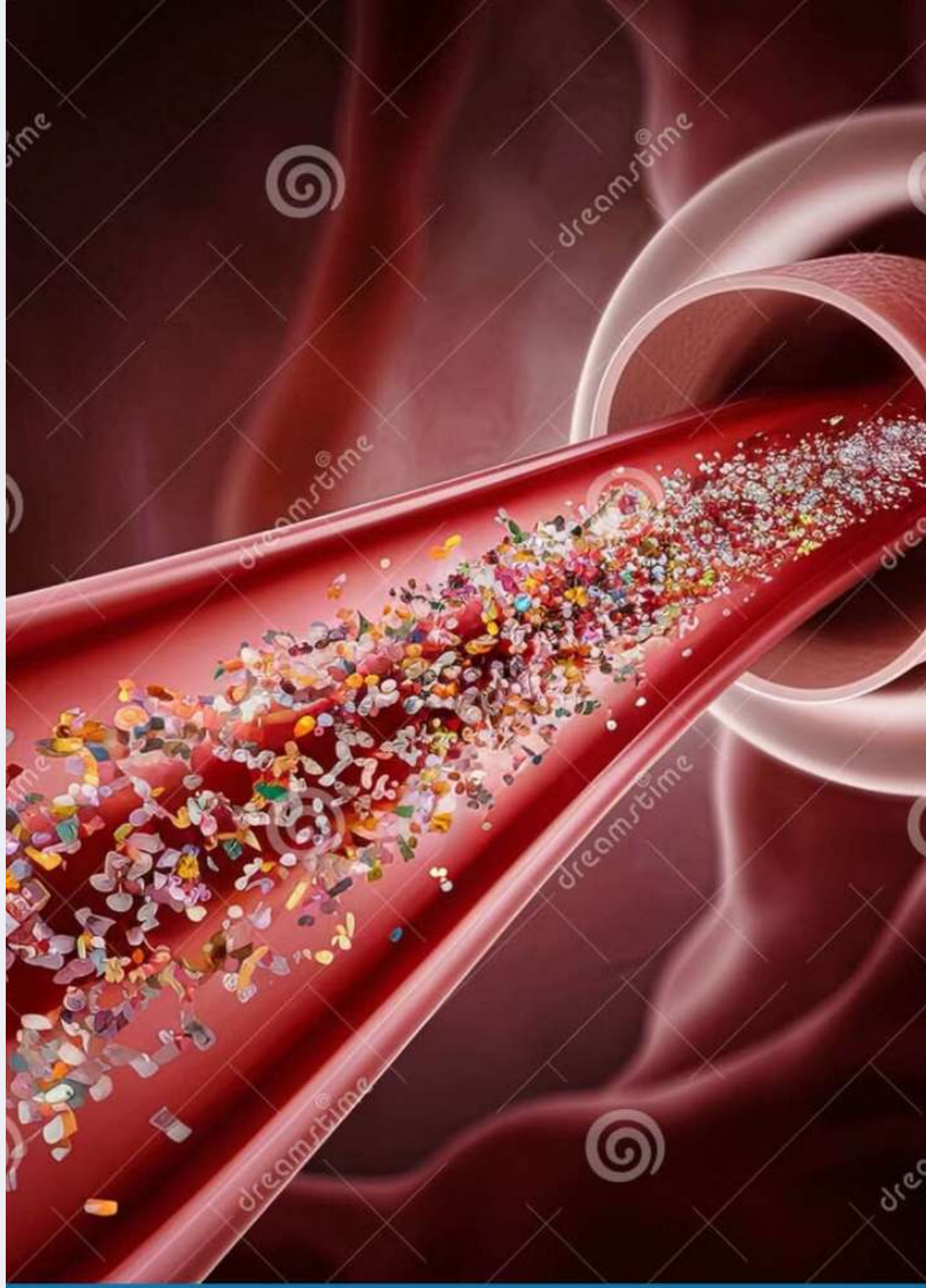

Introduction to Resistant Hypertension

The Challenge

Resistant hypertension occurs when blood pressure remains high despite taking three different medications. This condition impacts millions worldwide, and puts significant stress on the cardiovascular system, increasing the risk of life-threatening events like stroke, heart attack, and other complications.

Impact

This condition significantly impacts patient quality of life, leading to fatigue, dizziness, and headaches.

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Introduction to Resistant Hypertension

Approximately 10-15% of patients with hypertension have resistant hypertension, defined as uncontrolled high blood pressure despite the combined use of a renin-angiotensin system blocker, a calcium channel blocker, and a diuretic at maximally tolerated doses.

Patients with resistant hypertension are at an increased risk of cardiovascular and renal events and have traditionally had limited additional treatment options.

Endothelin receptor antagonism provides a novel therapeutic pathway for the management of patients with resistant hypertension.

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Current Treatments for Resistant Hypertension

Lifestyle Modifications

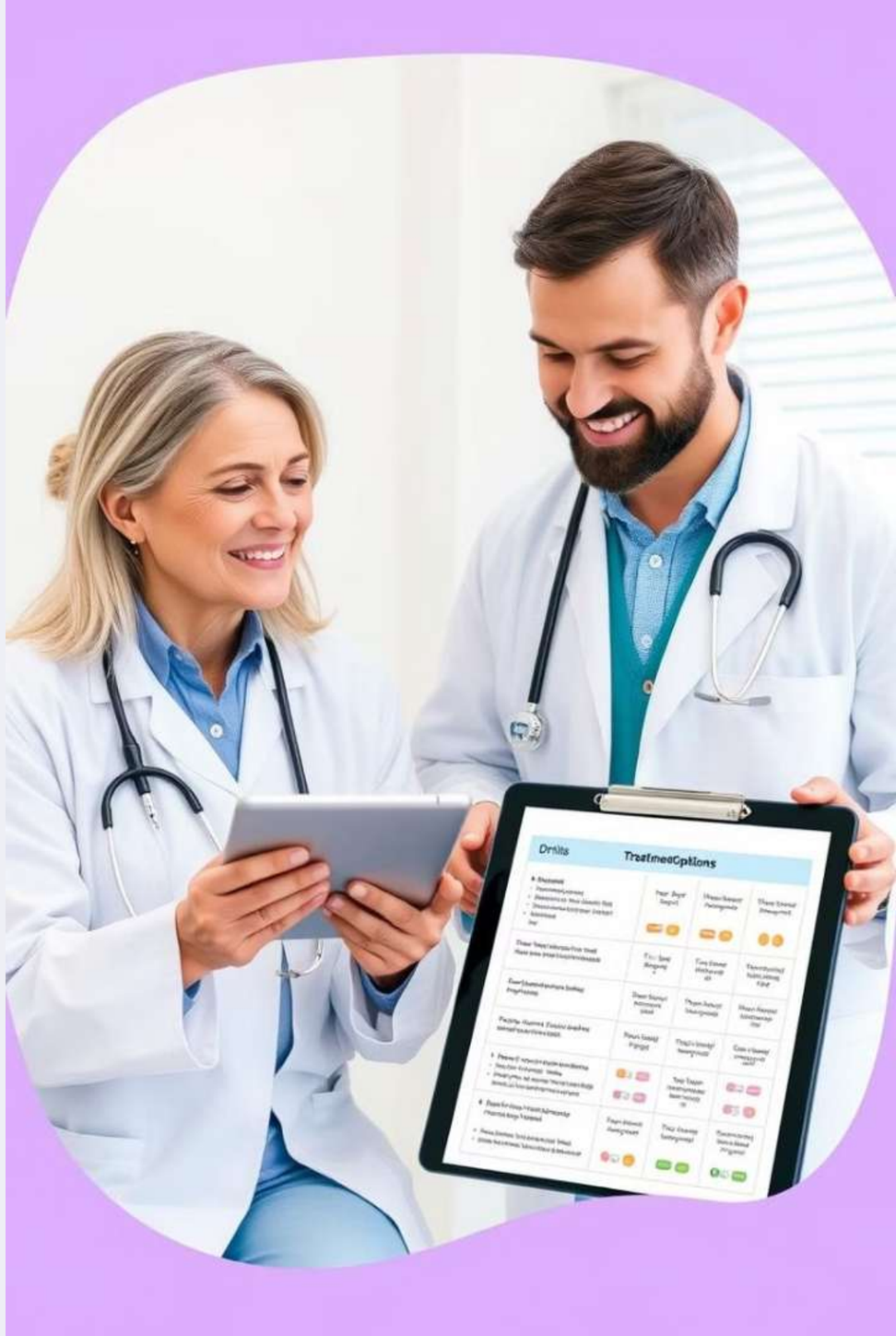
Dietary changes, regular exercise, and stress management can help lower blood pressure.

Pharmacological Approaches

Current treatments include diuretics, beta-blockers, calcium channel blockers, and ACE inhibitors.

Limitations

Despite these options, many patients struggle to achieve adequate blood pressure control.



Introduction to Aprocitentan

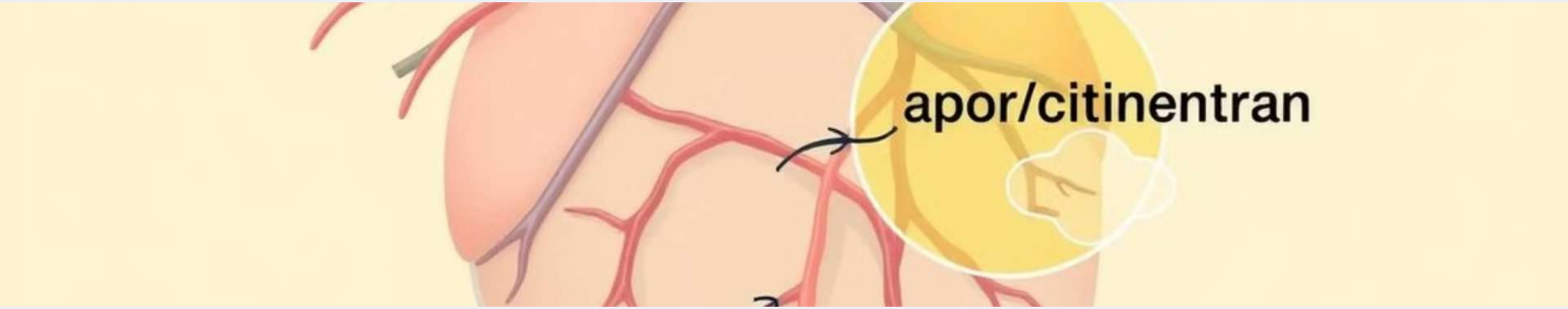
Aprocitentan is a dual antagonist of endothelin receptors A and B used for treatment-resistant hypertension.

It is a new medication for hypertension with a unique mechanism of action. It inhibits the binding of endothelin-1, a potent vasoconstrictor, to its receptors, reducing blood pressure.

Aprocitentan was approved by the FDA in March 2024 for the treatment of hypertension in patients inadequately controlled with standard therapy. It was the first antihypertensive employing a novel mechanism to be approved in almost 40 years.

Mechanism of Action

Endothelin-1 (ET-1) is the predominant endothelin isoform in the human cardiovascular system. It is produced by vascular endothelial cells to maintain vascular tone and is found in a variety of other cells including vascular smooth muscle cells, cardiomyocytes, fibroblasts, macrophages, neurons, and epithelial cells in the lungs and kidneys.



Potential Benefits for Patients

1

Improved Blood Pressure Control

More effective blood pressure control, potentially leading to better health outcomes.

2

Reduced Cardiovascular Risk

Lower blood pressure can reduce the risk of heart attacks, strokes, and other cardiovascular events.

3

Improved Quality of Life

Better blood pressure management can lead to improved quality of life and reduced symptoms.

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Thank You For Listening