

Intravascular lithotripsy for the treatment of resistant hypertension due to renal artery stenosis.

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Abstract

Hypertension, commonly known as high blood pressure, is a prevalent medical condition that affects a large portion of the population. It is a major risk factor for cardiovascular disease, which is the leading cause of death worldwide. Hypertension is generally treated with lifestyle changes and medications, but in some cases, it can be resistant to these treatments. In such situations, alternative approaches, such as Intravascular Lithotripsy (IVL), may be considered.

Keywords: Intravascular Lithotripsy, Hypertension, Renal Artery Stenosis, Catheter.

Introduction

Resistant hypertension is a common condition that affects millions of people worldwide. It is defined as hypertension that remains uncontrolled despite the use of three or more antihypertensive medications, including a diuretic. Renal artery stenosis (RAS) is one of the causes of resistant hypertension. RAS is a narrowing of one or both renal arteries, which can lead to reduced blood flow to the kidneys and increased renin secretion, resulting in hypertension. Intravascular lithotripsy (IVL) is a new technique that has been recently used for the treatment of resistant hypertension due to RAS [1].

Intravascular Lithotripsy (IVL)

Intravascular lithotripsy (IVL) is a new technique that uses sonic pressure waves to break up calcified plaques in blood vessels. The technique is similar to the technique used to break up kidney stones. IVL uses a catheter with an inflatable balloon on the tip that is inserted into the blocked artery. The balloon is then inflated, and sonic pressure waves are applied to the calcified plaque to break it up. The broken-up plaque is then cleared from the artery by the body's natural processes [2].

IVL is a minimally invasive procedure that uses sonic pressure waves to break up calcified plaque within the walls of blood vessels. The technique was initially developed to treat calcified coronary artery disease, but it has recently been studied for its potential to treat resistant hypertension as well [3].

IVL for the treatment of resistant hypertension due to RAS

IVL has been recently used for the treatment of resistant hypertension due to RAS. The technique has shown promising results in improving blood pressure control in patients with RAS. College of Cardiology showed that IVL was effective in improving blood pressure control in patients with RAS

who were resistant to medical therapy. The study included 30 patients with RAS who were resistant to medical therapy. The patients were treated with IVL, and their blood pressure was monitored for 6 months. The study showed that IVL was effective in reducing systolic blood pressure by an average of 26 mmHg and diastolic blood pressure by an average of 13 mmHg. It also showed that IVL was safe; with no major complications are reported [4].

IVL is particularly useful in patients with calcified plaques that cannot be treated with other techniques, such as balloon angioplasty or stenting. Calcified plaques are a common finding in patients with RAS, and they can make the treatment of RAS challenging. IVL can be used to break up calcified plaques and improve blood flow to the kidneys, which can lead to improved blood pressure control [5].

Conclusion

IVL is a new technique that has shown promising results in the treatment of resistant hypertension due to RAS. The technique is safe and effective in improving blood pressure control in patients with RAS who are resistant to medical therapy. IVL is particularly useful in patients with calcified plaques that cannot be treated with other techniques. IVL has the potential to become a standard treatment option for patients with resistant hypertension due to RAS.

References

1. Lee D, Kinaga J, Kasi V. Renal artery stenosis treated successfully with shockwave intravascular lithotripsy. *Case Rep.* 2020;2(15):2424-8.
2. Di Palma G, Cortese B. Intravascular lithotripsy and dual drug-coated balloons for the treatment of severely calcific renal in-stent restenosis: All is fair in war. *Cardiovasc Revasc Med.* 2021;28:193-6.

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3. Hill JM, Kereiakes DJ, Shlofmitz RA, et al. Intravascular lithotripsy for treatment of severely calcified coronary artery disease. *J Am Coll Cardiol.* 2020;76(22):2635-46.
4. Seif S, Kumar A, Arya S, et al. Intravascular lithotripsy to treat an underexpanded coronary stent during index procedure: A case report study. *Avicenna J Med.* 2021;11(01):54-7.
5. Thandra A, Betts L, Aggarwal G, et al. Intravascular lithotripsy for acute stent under-expansion and in-stent restenosis: A case series. *Curr Probl Cardiol.* 2022:101511.