

Your membership matters.

Continue to help lead the fight against kidney disease. Renew today.

www.asn-online.org/membership



CJASN

Clinical Journal of the
American Society of Nephrology

[HOME](#) | [CURRENT ISSUE](#) | [ADVERTISE](#) | [SUBSCRIBE](#) | [ARCHIVES](#) | [FEEDBACK](#) | [ALERTS](#) | [HELP](#)

User Name

Password

[LOG IN](#)

[Go](#)

[Advanced Search](#)

Recognition and Management of Resistant Hypertension

Branko Braam, Sandra J. Taler, Mahboob Rahman, Jennifer A. Fillaus, Barbara A. Greco, John P. Forman, Efrain Reisin, Debbie L. Cohen, Mohammad G. Saklayen, S. Susan Hedayati

[+ Author Affiliations](#)

Correspondence:

Dr. Branko Braam, University of Alberta Hospital, Department of Medicine, Division of Nephrology and Immunology, 11-132 CSB Clinical Sciences Building, Edmonton, AB, Canada T6G 2G3. Email: branko.braam@ualberta.ca

Abstract

Despite improvements in hypertension awareness and treatment, 30%-60% of hypertensive patients do not achieve BP targets and subsequently remain at risk for target organ damage. This therapeutic gap is particularly important to nephrologists, who frequently encounter treatment-resistant hypertension in patients with CKD. Data are limited on how best to treat patients with CKD and resistant hypertension, because patients with CKD have historically been excluded from hypertension treatment trials. First, we propose a consistent definition of resistant hypertension as BP levels confirmed by both in-office and out-of-office measurements that exceed appropriate targets while the patient is receiving treatment with at least three antihypertensive medications, including a diuretic, at dosages optimized to provide maximum benefit in the absence of intolerable side effects. Second, we recommend that each patient undergo a standardized, stepwise evaluation to assess adherence to dietary and lifestyle modifications and antihypertensive medications to identify and reduce barriers and discontinue use of substances that may exacerbate hypertension. Patients in whom there is high clinical suspicion should be evaluated for potential secondary causes of hypertension. Evidence-based management of resistant hypertension is discussed with special considerations of the differences in approach to patients with and without CKD, including the specific roles of diuretics and mineralocorticoid receptor antagonists and the current place of emerging therapies, such as renal denervation and baroreceptor stimulation. We endorse use of such a systematic approach to improve recognition and care for this vulnerable patient group that is at high risk for future kidney and cardiovascular events.

blood pressure chronic kidney disease cardiovascular disease
renal denervation sodium intake Antihypertensive Agents
Denervation diuretics Humans hypertension kidney Life Style
Mineralocorticoid Receptor Antagonists Pressoreceptors
Renal Insufficiency, Chronic

Copyright © 2017 by the American Society of Nephrology

We recommend

Assessment and management of hypertension in transplant patients.

[Matthew R Weir et al., J Am Soc Nephrol](#)

Commentary on the 2014 BP guidelines from the panel appointed to the Eighth Joint National Committee (JNC 8).

[Efrain Reisin et al., J Am Soc Nephrol](#)

Clinical correlates of ambulatory BP monitoring among patients with CKD.

[Satoshi Iimuro et al., Clin J Am Soc Nephrol](#)

Vascular and renal hemodynamic changes after renal denervation.

[« Previous](#) | [Next Article »](#)
[Table of Contents](#)

This Article

Published online before
print November 2016,
doi: 10.2215/
CJN.06180616
CJASN March 07, 2018
vol. 12 no. 3 524-535

» Abstract Free
Figures Only Free
Full Text Free
Full Text (PDF) Free
Supplemental Data

Article Usage Stats

Article Usage Statistics



Services

Email this article to a
colleague
Alert me when this article is
cited
Alert me if a correction is
posted
Similar articles in this journal
Similar articles in PubMed
Download to citation manager
[© Get Permissions](#)

[Citing Articles](#)

[Google Scholar](#)

[PubMed](#)

Current Issue

March 07, 2018, 13 (3)



Alert me to new issues of
CJASN

ONLINE SUBMISSION

AUTHOR RESOURCES

ABOUT CJASN

EDITORIAL BOARD

REPRINTS/PERMISSIONS

IMPACT FACTOR

MOST READ

MOST CITED

CJASN ePress

Updated on:
March 9, 2018
By Date / By Subject



Advertising Disclaimer

Christian Ott et al., Clin J Am Soc Nephrol

Masked Hypertension and Elevated Nighttime Blood Pressure in CKD: Prevalence and Association with Target Organ Damage.

Paul E Drawz et al., Clin J Am Soc Nephrol

Understanding CKD among patients with T2DM: prevalence, temporal trends, and treatment patterns—NHANES 2007–2012

Bingcao Wu et al., BMJ Open Diab Res Care

ADA Updates Guidelines for Patients With Hypertension, Diabetes

Medscape CME

Ibuprofen associated with elevated blood pressure in patients with arthritis

Medicine Matters rheumatology

Ablative Solutions wins FDA nod for Phase II chemical denervation trial

Sarah Faulkner, Drug Delivery Business

Assessment of left ventricular function and peripheral vascular arterial stiffness in patients with dipper and non-dipper hypertension

Chunting Zhao et al., J Investig Med

Powered by **Trend MD**

Articles citing this article

Resistant Hypertension, Time-Updated Blood Pressure Values and Renal Outcome in Type 2 Diabetes Mellitus

JAMA September 22, 2017 6): (9) e006745

[»Abstract](#) [»Full Text](#) [»Full Text \(PDF\)](#)

Copyright © 2018 by the American Society of Nephrology

Be a part of something innovative, influential and dynamic.

Be a part of ASN.



ASN members enjoy discounts on ASN's educational programs, subscriptions to ASN's publications, and more.

Join or renew today at
www.asn-online.org/membership



Print ISSN: 1555-9041

Online ISSN: 1555-905X