

## Acute Hypertensive Encephalopathy and Imaging associated with unilateral high grade renal artery stenosis

Hypertensive encephalopathy is one the manifestations of a hypertensive crisis. It is not the absolute value of the blood pressure that causes the encephalopathy, but rather the presence of an abrupt rise in pressure. In terms of clinical and radiographic findings, there are many similarities among a group of entities, including hypertensive encephalopathy, eclampsia and immunosuppressant neurotoxicity. Hyperperfusion syndromes may represent these clinical disease states that may share the same pathophysiology. Patients diagnosed with hypertensive encephalopathy should be diagnosed and treated promptly in order to avoid further neurological complications.

### RECENT CASE REPORT:

A 52-year-old man presents to ER with severe hypertension, headache, blurred vision and extremity numbness, with imaging findings significantly more extensive and dramatic than those typically seen with PRES (posterior reversible encephalopathy syndrome).

After having an abnormal CT scan at Stevens Hospital ER, patient was placed on antihypertensive therapy. Follow-up MRI was performed at Stevens Radia Imaging Center for further evaluation of these abnormalities.

After a recurrent episode of sever hypertension accompanied by neurological complaints/confusion,

patient was found to have a unilateral high grade renal artery stenosis. This was treated with angioplasty and stenting and patient's hypertension and symptoms have resolved. ■



Fig. 1 - CT scan taken in the ER showing diffuse low attenuation in white matter following perivasular spaces in basal ganglia, bilaterally similar involvement was present in pons.

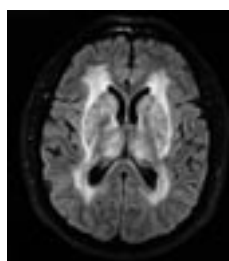


Fig. 2 - MRI scan with abnormal increased FLAIR signal in white matter and basal ganglia consistent with findings on CT.



Fig. 3 - Same MRI showing diffuse subcortical and deep white matter, abnormal increased FLAIR signal.

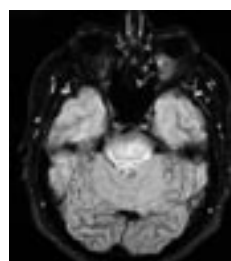


Fig. 4 - MRI scan with pontine abnormal increased FLAIR signal similar to findings in basal ganglia.

## MRI in Acute Hypertensive Encephalopathy at Stevens Radia Imaging Center

### *Indications*

- Headaches
- Altered mental functioning
- Seizures
- Visual disturbances
- Hypertension

### *Walk-In Non-Contrast CTs Available*

Stevens Radia now offers walk-in non-contrast CT exams from 8:00 a.m. to 5:00 p.m., Monday through Friday. In order to ensure prompt check-in for your patients, please fax a requisition with the indications and/or signs and symptoms to Stevens Radia *prior* to sending the requisition with your patient. This will expedite verification of your patient's insurance coverage.

Walk-in exams include:

- ❖ Head
- ❖ Sinus
- ❖ Cervical and lumbar spine
- ❖ Chest
- ❖ KUB

To schedule a patient, call (425) 640-4949.

Need referral forms? Call (425) 640-4949 for delivery to your office.  
Need directions? Visit us at  
[www.radia.net](http://www.radia.net)

## STEVENS RADIA IMAGING CENTER

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## *Stevens Radia Improves Scheduling and Data Management*

Stevens Radia transitioned to Groupcast Practice Management System (GPMS) in mid-March, an electronic scheduling and storing system. The system:

- ❖ Allows easier scheduling for physician's offices and patients.
- ❖ Electronically stores patient information into a database for future immediate access.
- ❖ Securely stores confidential patient data in accordance with HIPAA regulations.

We appreciate your patience as we implement the system, and welcome your feedback.

## *Blood Pressure Control with Clevidipine*

While nitroglycerin and sodium nitroprusside have been used effectively in patients undergoing cardiac surgery to control blood pressure, a new therapy called clevidipine may perform even better, according to researchers at Duke University School of Medicine. Three separate studies evaluated clevidipine, a novel third-generation intravenous (IV) dihydropyridine calcium channel blocker, to measure blood pressure control against standard alternative agents.

The studies, collectively known as ECLIPSE (Evaluation of Clevidipine In the Postoperative Treatment of Hypertension Assessing Safety Events), compared clevidipine to each of three standard therapies: nitroglycerin, nitroprusside or nicardipine.

The first two ECLIPSE studies found that patients treated with clevidipine experienced significantly improved blood pressure control over those who received nitroglycerin (6.02 vs. 14.88 AUC) or nitroprusside (8.94 vs. 17.28 AUC) ( $p < 0.05$  for both studies). The third study found no significant difference in blood pressure control between clevidipine and nicardipine (5.27 vs. 5.67 AUC). The safety outcomes were similar for all medications. In a separate but supporting study, the same research team found that a higher AUC in cardiac surgery patients is a significant indicator of increased 30-day mortality.

*News-Medical.Net*  
*Medical Studies/Trials*  
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*Dear Colleague:*

*I'm pleased to send you this issue of "Update" from Stevens Radia Imaging Center. I am here to be of service to you in any way I can, including consultation on cases and helping decide which modality will give the best results. Your questions/ comments are welcome. My cell number is (206) 799-1297.*

Brian McCallie, MD, Medical Director