DIAGNOSIS OF RENOVASCULAR DISEASE

Renovascular hypertension is an uncommon but important cause of hypertension in children. It is usually diagnosed after a long delay because blood pressure is infrequently measure in children and high values are generally dismissed as inaccurate. Many children with renovascular disease have abnormalities of other blood vessels like aorta cerebral aorta, cerebral, intestinal or iliac.

Renovascular disease is the most curable cause of high blood pressure in children. It constitutes not more than 1% of patients' children who do have hypertension in childhood. The prevalence is much higher in patients with acute, severe or refractory hypertension resistant to treatment at young age.

Invasive procedures do have potential harm, and it is advisable to test only patients who are thought to have a high likelihood of benefiting from the procedures.

1. Failure of optimal medical therapy to control the blood pressure in patients with high likelihood of having renovascular disease.
2. Short duration of blood pressure elevation in patients with high likelihood of having renovascular disease.

Investigation can be done in patients who fulfill all of the following criteria:

1. The clinical findings suggest a cause of secondary hypertension rather than primary hypertension.
2. The patient does not appear to have another cause of secondary hypertension such as primary kidney disease or primary aldosteronism or pheochromocytoma
3. Intervention is planned if a significant stenotic lesion is found.

Diagnostic Test Options are:

1. Renal Arteriography
2. Other Less Invasive Methods which can be of great benefit
   a. Duplex Doppler Ultrasonography
   b. Computed Tomographic Angiography
   c. Magnetic Resonance Angiography

The choice of test should be based upon institutional expertise and patient factors.

Non-invasive imaging is less reliable in fibromuscular dysplasia. The risk of a false negative result from non-invasive imaging is more likely to occur in patients with stenotic lesion that involves the intrarenal portion of the renal artery.

Other non-invasive test, such as peripheral plasma renin activity, captopril renogram, renal vein renin measurement are tests that are no longer consider to be suitable for initial testing for patients with suspected renovascular disease because of their poor sensitivity and specificity, however, there are still being used.

There is no sufficiently accurate non-invasive radiologic or serologic diagnostic set that, if negative, will completely exclude the presence of renal artery stenosis. Each test is associated with strength and weakness.

In patients with renal failure:

- Duplex Doppler ultrasonography is the preferred initial non-invasive test (if technical expertise is available).
- CT Scan with CT angiography (if technical expertise is unavailable).

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