



Renal MRA

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Standard uses: Renal artery stenosis or vasculitis

Patient prep: NPO for 4 hours prior to study is possible

Oral contrast: None

Coverage: Must include origin of celiac artery, origin of superior mesenteric artery (SMA), right and left renal arteries to the branching in the renal hilum with no motion blurring

Contact rad as necessary.

Intravenous contrast: Single dose gadolinium.

Adult - 0.5 mmol/mL, maximum 20mL. Administer 2mL per second, example - MultiHance/ProHance/Doterem
0.25 mmol/mL, maximum 10mL, Administer 1.5mL per second, example - Gadavist

Anti-peristaltic agent: None.

SUMMARY:

1. Localizer
 - a. Breath hold
 - b. Free Breathing
2. Cor T2 HASTE
3. Ax Trufi
4. Sag Trufi
5. Cor T1 Ultra-fast 3D Pre
6. Cor T1 Ultra-fast 3D arterial
7. Ax T1 Dixon Post

SEQUENCES:

1. Localizer
 - a. Breath hold
 - b. Free Breathing
2. Coronal T2 HASTE Ultra-fast SE (HASTE, SSFSE, FASE)
 - a. Breath hold, concatenation/multi-breath hold is less desirable than single breath hold
 - b. Large FOV. Complete front to back coverage.
 - c. Goal parameters
 - i. Slice thickness 3mm, 1mm Gap.



3. **Axial T2 Trufi (Trufi, Fiesta, Cosmic, Balanced FFE, True SSFP)**
 - a. Multiple breath holds
 - b. FOV to patient anatomy. Slices extend from above the adrenal glands to below the kidneys.
 - c. Goal parameters
 - i. Slice 3mm, 0.6 mm Gap (20%)
4. **Sag T2 Trufi (Trufi, Fiesta, Cosmic, Balanced FFE, True SSFP)**
 - a. Multiple breath holds
 - b. FOV to patient anatomy. Slices extend to include both kidneys.
 - c. Goal parameters
 - i. Slice 4mm, 0.4mm Gap (10%)
5. **Cor T1 Ultra fast 3D-GE (FLASH, SPGR, T1-FFE, RF Spoiled SARGE, RSSG) pre-contrast**
 - a. Breath hold
 - b. Slices cover origin of celiac artery, origin of superior mesenteric artery, (SMA), right and left renal arteries to the branching of the renal hilum
 - c. Goal parameters
 - i. Slab slices ≤ 1 mm, (ACR slice thickness ≤ 3.0 mm, reconstructed slice interval ≤ 1.5 mm, Voxel volume ≤ 6.0 mm³)
6. **Cor T1 Ultra fast 3D-GE (FLASH, SPGR, T1-FFE, RF Spoiled SARGE, RSSG) post-contrast**
 - a. Copy parameters from pre-contrast Cor T1
 - b. Trigger off descending aorta if scanner is capable or start at 20 seconds.

NOTE: Add Subtractions and MIPs

7. **Axial T1 Dixon Post (Dixon TSE, IDEAL, mDixon SD, mDixon TSE, FatSep)**
 - a. Multi-breath holds as needed
 - b. Slices extend from above the adrenal glands to below the kidneys
 - c. Goal parameters
 - i. 3 mm thickness, 0.6mm Gap (20%)