# ARDL (AIR Recon Deep Learning™) MRA 1.5T Optional Sequences

### INSTRUCTIONS AND PATIENT PREPARATION

| | |
|---|---|
| **ARDL** | ARDL is available on recent upgrades to GE scanners.<br>ARDL is a denoising technique. |
| **Notes** | Like any protocol update, each radiology department must test any change to protocol and get chief radiologist approval prior to implementing.<br>Recent upgrades to GE scanners removed the imaging option "No Phase Wrap (NPW)" and now has a "NPW Factor" that can be reduced or increased to prevent wrap. |

### CONTRAST AGENT PARAMETERS

| Contrast Agents | Dose |
|---|---|
| **Gadopiclenol (VUEWAY)** | 0.075 mmol/kg up to a calculated volume of 10 mL |
| **Saline Flush** | 50 mL |
| **Comments** | 10-45 min<br>after injection.<br>Delayed enhancement<br>Short Axis and Long Axis views |

### IMAGING PARAMETERS

| Scan Description | OBLIQUE SSh Phase Sensitive Viability | OBLIQUE Phase Sensitive Viability | OBLIQUE Double IR T1 Gated | OBLIQUE Double IR T2 Fat | AXIAL RT T2 Vasculitis | SONIC DL 1RR (Short Axis or Long Axis Cardiac scans) | SONIC DL 6RR (Short Axis or Long Axis Cardiac scans) |
|---|---|---|---|---|---|---|---|
| **Mode** | 2D | 2D | 2D | 2D | 2D | 2D | 2D |
| **Pulse Sequence** | FIESTA | FAST GRE | FSE-XL | FSE-XL | FRFSE-XL | FIESTA | FIESTA |
| **Imaging Options** | Card Gate,<br>SEQ, EDR, FAST, PS, ARC,<br>IrP | Card Gate, EDR, FAST, PS, ARC,<br>IrP | Card Gate,<br>SEQ, EDR, FAST, ZIP512, BSP,<br>ARC | Card Gate,<br>SEQ, BSP,<br>FAST | TRf, FAST,<br>ARC,<br>EDR, RespTrig | Card Gate,<br>SEQ, EDR, FAST, SqP,<br>ZIP512,<br>Sonic DL | Card Gate,<br>SEQ, EDR, FAST, SqP,<br>ZIP512,<br>Sonic DL |

### SCAN PARAMETERS

| Scan Description | OBLIQUE SSh Phase Sensitive Viability | OBLIQUE Phase Sensitive Viability | OBLIQUE Double IR T1 Gated | OBLIQUE Double IR T2 Fat | AXIAL RT T2 Chest | SONIC DL 1RR (Short Axis or Long Axis Cardiac scans) | SONIC DL 6RR (Short Axis or Long Axis Cardiac scans) |
|---|---|---|---|---|---|---|---|
| **TE** | Min-Full | Min | 20 | 102 | 90 | Min-Full | Min-Full |
| **TR** | Def | Def (6.1) | — | Def | Def | Def | Def |
| **TI** | TI 250 - 320 PRN | TI 250 - 320 PRN | BSP TI Auto (425) | BSP TI Auto<br>Inv TI Auto | — | — | — |
| **Flip Angle** | 20 | 20 | 155 | 155 | 16 | 55 | 55 |
| **ETL** | — | — | 12 | 32 | 50 | — | — |
| **ARDL** | Medium | Medium | Medium | Medium | Medium | Sonic DL | Sonic DL |
| **Bandwidth** | 125 | 50 | 62 | 62 | Fat Sat | 100 | 100 |

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*Supported by an educational grant from Bracco Diagnostics Inc.*

**MR Gadopiclenol (VUEWAY®) Protocol for GE HealthCare Systems**
**MR Angiography**

IMAGING FORUMS, INC.

**ACQUISITION PARAMETERS**

| Scan Description | OBLIQUE SSh Phase Sensitive Viability | OBLIQUE Phase Sensitive Viability | OBLIQUE Double IR T1 Gated | OBLIQUE Double IR T2 Fat | AXIAL RT T2 Chest | SONIC DL 1RR (Short Axis or Long Axis Cardiac scans) | SONIC DL 6RR (Short Axis or Long Axis Cardiac scans) |
|---|---|---|---|---|---|---|---|
| **MATRIX freq** | 192 | 224 | 256 | 256 | 320 | 180 | 320 |
| **MATRIX phase** | 180 | 160 | 224 | 192 | 224 | 160 | 224 |
| **NEX** | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| **Phase FOV** | 1 | 1 | 1 | 1 | 0.8 | 1 | 1 |
| **Freq Direction** | — | — | — | — | R/L | — | — |
| **Accel** | Ph 3 | PH 1 | 2 | — | 2 | — | — |
| **Adv CV** | IR Prep<br>Pulse 1<br>Enhanced | IR Prep<br>Pulse 1<br>Enhanced | CV14 1.25<br>CV19 1 | CV14 3.33<br>CV19 1 | Fat Eff 1<br>EnFnL Sup 0 | CV0 1 | CV0 1 |
| **Cardiac** | #RR 2<br>Trigg Wind 10<br>Trigg Delay Rec | #RR 2<br>Trigg Wind 10<br>Trigg Delay Rec | #RR 2<br>Trigg Wind 10<br>Trigg Delay Min<br>VPS 8 | #RR 2<br>Trigg Wind 10<br>Trigg Delay Min<br>VPS 8 | — | Trig Type 5<br>VPS 14<br>Acq Ph 40 | Trig Type 5<br>VPS 9<br>#Acq Ph 28 |

**SCANNING RANGE**

| Scan Description | OBLIQUE SSh Phase Sensitive Viability | OBLIQUE Phase Sensitive Viability | OBLIQUE Double IR T1 Gated | OBLIQUE Double IR T2 Fat | AXIAL RT T2 Chest | SONIC DL 1RR (Short Axis or Long Axis Cardiac scans) | SONIC DL 6RR (Short Axis or Long Axis Cardiac scans) |
|---|---|---|---|---|---|---|---|
| **FOV** | 40 | 40 | 36 | 36 | 36 | 35 | 35 |
| **Slice Thickness** | 8 | 8 | 7 | 7 | 5 | 8 | 8 |
| **Spacing** | 0 | 2 | 1 | 1 | 1 | 2 | 2 |
| **Number of Slices** | 15-20 | 15-20 | Variable | Variable | 40 Slices | Variable | Variable |
| **Approx. Scan Time** | ± 20-35 sec<br>for full SA Stack<br>gating dependent | ± 8-15 sec per BH<br>gating dependent | ± 8-15 sec per BH<br>gating dependent | ± 8-15 sec per BH<br>gating dependent | ± 2:30 | 2 sec per Slice | 7 sec per Slice |

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