ARDL (AIR Recon Deep Learning™) SPINE 1.5T Sequences

INSTRUCTIONS AND PATIENT PREPARATION

ARDL	• ARDL is available on recent upgrades to GE scanners • ARDL is a denoising technique
Notes	• Like any protocol update, each radiology department will need to test any change to protocol and get chief radiologist approval prior to implementing • 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 • ARDL is available for Propeller and CUBE sequences at 30.0

CONTRAST AGENT PARAMETERS

Contrast Agents	Dose	Injection Rate
Gadopiclenol (VUEWAY)	0.05 mmol/kg up to a calculated volume of 10 mL	Hand Bolus
Saline Flush	10-20 mL	Hand Bolus

IMAGING PARAMETERS

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
Imaging Mode	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D
Imaging Options	EDR, TRF, FAST, ARC	FC, EDR, TRF, FAST, FR, ARC	TRF, FAST	FC, TRF, FAST, FR	EDR, TRF, FAST	TRF, FAST, FR	FC, EDR, FAST, ZIP512	EDR, TRF, FAST, ZIP512	FC, EDR, TRF, FAST, ZIP512, FR	EDR, TRF, FAST, ZIP512	FC, EDR, TRF, FAST, ZIP512, FR	EDR, TRF, FAST, ZIP512, ARC	EDR, TRF, FAST, ARC	TRF, FAST	EDR, TRF, FAST	EDR, TRF, FAST, ZIP512	EDR, TRF, FAST, ZIP512	EDR, TRF, FAST, ZIP512, ARC
Pulse Sequence	PROPELLER	PROPELLER	FSE-XL	FSE-XL	FSE-XL	FSE-XL	MERGE	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	PROPELLER	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL
ARC Phase	2	2	—	—	—	—	—	—	—	—	—	1.5	2	—	—	—	—	1.5

IMAGE RECON

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
Recon DL Strength	Medium	Medium	Medium	Medium	Medium	Medium	Off	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Intensity Correction	SCENIC	SCENIC	PURE	PURE	PURE	PURE	PURE	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	PURE	PURE	SCENIC	SCENIC	SCENIC

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MR Gadopiclenol (VUEWAY®) Protocol for GE HealthCare Systems
Central Nervous System

NW IMAGING FORUMS, INC.

SCAN RANGE

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
FOV	22	22	32	32	28	28	18	16	16	16	16	16	—	32	28	16	16	16
Phase FOV	—	—	1	1	0.9	0.9	0.6	0.6	0.8	0.8	0.8	0.7	—	1	0.9	0.6	0.8	0.7
Slice Thickness	4	4	4	4	4	4	4	4	4	4	4	4	—	4	4	4	4	4
Slice Spacing	0.4	0.4	0.4	0.4	0.4	0.4	0	0.4	1	1	0.4	0.4	—	0.4	0.4	0.4	1	0.4
Freq DIR	Unswap	S/I	Swap	Swap	S/I	S/I	R/L	R/L	R/L	R/L	R/L	R/L	S/I	A/P	Unswap	R/L	R/L	R/L
No Phase Wrap	1.8	1.8	1.5	1.5	1	1	2	2	2	2	2	2	1.8	1.5	1	2	2	2

ACQUISITION TIMING

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
Freq	260	300	384	448	320	320	256	240	200	200	320	240	260	384	320	240	200	240
Phase	—	—	320	320	256	256	160	160	160	140	224	170	—	320	256	160	140	170
NEX	2	2	1	1	2	2	1	1	1	1	1	1	2	1	2	1	1	1
Chem Sat	—	—	—	—	—	—	—	—	—	—	—	—	Fat	Fat	Fat	With or without Fat	With or without Fat	With or without Fat
Flow Comp Direction	—	Freq	—	Freq	—	—	—	—	Slice	—	Slice	—	—	—	—	—	—	—

SCAN TIMING

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
Flip Angle	160	160	160	160	160	160	25	111	160	111	160	111	160	160	160	111	111	111
TE	16	140	20	85	20	85	—	Min Full	101	Min Full	101	Min Full	16	20	20	Min Full	Min Full	Min Full
Number of Echoes	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1
TR	500	3840	500	2800	TR Min: 500 TR Max: 750	3104	1017.5	678	TR Min: 2500 TR Max: 6000	587	3197	847	806	500	575	678	587	847
Echo Train Length	4	30	5	18	5	25	—	3	19	3	19	3	4	5	5	3	3	3
Receiver Bandwidth	83.33	83.33	62.5	62.5	62.5	62.5	31.25	27.78	31.25	27.78	—	27.78	83.33	62.5	62.5	27.78	27.78	27.78

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USER CVS

Scan Description	C-spine SAGITTAL T1 PROPELLER DL	C-spine SAGITTAL T2 PROPELLER DL	T-spine SAGITTAL T1 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T1 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL T2* MERGE	C-spine AXIAL T1 .6pFOV DL	T-spine AXIAL T2 .8 pFOV DL	T-spine AXIAL T1 .8pFOV DL	L-spine AXIAL T2 .8pFOV DL	L-spine AXIAL T1 DL .7pFOV	Post C-spine SAGITTAL T1 PROPELLER Fat DL	Post T-spine SAGITTAL T1 Fat DL	Post L-spine SAGITTAL T1 Fat DL	Post C-spine AXIAL T1 .6pFOV DL	Post T-spine AXIAL T1 DL .8pFOV	Post L-spine AXIAL T1 DL .7pFOV
USER CV	C45:T56 CV6: None CV6: None CV15: 2 CV16: 1	CV6: None CV13: None CV15: 1 CV19: 1	CV6: None CV9: None CV15: None CV16: None CV18: None CV21: None	CV6: None CV13: None CV15: None CV18: None CV19: 1 CV21: None	CV6: None CV7: None CV9: None CV15: None CV16: None CV18: None CV21: None	CV6: None CV7: None CV8: None CV9: None CV12: 1 CV13: None CV15: 0 CV18: None CV19: 1 CV21: None CV30: 1	CV8: None CV19: 2 CV20: None	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None CV21: None CV30: 1 CV39: 1	CV6: None CV9: None CV12: None CV15: 1 CV18: 1 CV21: None CV30: 1 CV39: 1	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None CV21: None CV30: 1 CV39: 1	CV6: None CV12: None CV15: 1 CV18: 1 CV21: None CV30: 1 CV39: 1	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None CV21: None CV30: 1 CV39: 1	CV6: None CV13: None CV15: 2 CV16: 1 CV19: 1	CV6: None CV8: None CV9: None CV12: 1 CV13: None CV15: None CV16: None CV18: None CV19: 1 CV21: None CV30: 1	CV6: None CV7: None CV8: None CV9: None CV12: 1 CV13: None CV15: None CV16: None CV18: None CV19: 1 CV21: None CV30: 1 CV39: 1	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None CV21: None CV30: 1 CV39: 1	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None C45:T56CVS CV30: 1 CV39: 1	CV6: None CV9: None CV12: 1 CV15: 2 CV16: 1 CV18: None CV21: None CV30: 1 CV39: 1
Scan Time	2-3 min	2-3 min	2-3 min	2-3 min	2-3 min	2-3 min	4 min	1-2 min	3-4 min	4-5 min	2-3 min	3-4 min	2-3 min	2-3 min	2-3 min	2-3 min	4-5 min	3-4 min

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