NW
IMAGING FORUMS, INC.

ARDL (AIR Recon Deep Learning™) SPINE 3.0T 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 Agent	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 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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	SEQ, EDR, TRF, FAST, T1FLAIR	FC, SEQ, EDR, TRF, FAST, T1FLAIR	FC, SEQ, EDR, TRF, FAST, T1FLAIR	FC, EDR, TRF, FAST, FR	FC, EDR, TRF, FAST, FR	FC, EDR, TRF, FAST, FR	FC, EDR, FAST	EDR, TRF, FAST, ZIP512, ARC	FC, EDR, TRF, FAST, ZIP512	EDR, TRF, FAST, ZIP512	FC, EDR, TRF, FAST, ZIP512	EDR, TRF, FAST, ZIP512, ARC	EDR, TRF, FAST	EDR, TRF, FAST	EDR, TRF, FAST	EDR, TRF, FAST, ZIP512, ARC	EDR, TRF, FAST, ZIP512	EDR, TRF, FAST, ZIP512, ARC
Pulse Sequence	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	MERGE	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL
ARC Phase	—	—	—	—	—	—	—	1.5	—	—	—	1.5	—	—	—	1.5	—	1.5

IMAGE RECON

Scan Description	C-spine SAGITTAL T1 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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	SCENIC	SCENIC	SCENIC	PURE	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	NONE	SCENIC	SCENIC	SCENIC	SCENIC

SCAN RANGE

Scan Description	C-spine SAGITTAL T1 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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	32	28	22	32	28	16	16	16	16	16	16	22	32	28	16	16	16
Phase FOV	1	1	1	1	1	1	0.7	0.7	0.7	0.6	0.7	0.7	1	1	1	0.7	0.6	0.7
Slice Thickness	4	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	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Freq DIR	A/P	A/P	A/P	A/P	A/P	A/P	R/L	R/L	R/L	R/L	R/L	R/L	A/P	A/P	A/P	R/L	R/L	R/L
No Phase Wrap	1.5	1.5	1.5	1.5	1.5	1.5	2	2	2	2	2	1.9	1.5	1.5	1.5	2	2	1.9

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

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

IMAGING FORUMS, INC.

ACQUISITION TIMING

Scan Description	C-spine SAGITTAL T1 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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	320	384	320	384	448	320	288	220	220	220	320	200	320	320	320	220	220	200
Phase	256	320	256	256	320	256	192	180	200	180	224	160	192	256	256	180	180	160
NEX	1	1	1	1.5	1	1.5	1	1	1	1	1	1	1	1	1	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	Freq	Freq	Freq	—	—	Slice	—	Slice	—	—	—	—	Off	—	—

SCAN TIMING

Scan Description	C-spine SAGITTAL T1 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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
TE	24	24	24	102	102	85	—	18	130	18	140	18	18	18	18	18	18	18
TR	2100	2600	2600	3000	3087	4680	850	701	4500	701	3431	500	600	600	850	701	701	500
TI	712	809	810	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Echo Train Length	8	8	8	21	18	25	—	3	17	3	17	3	4	4	4	3	3	3
Receiver Bandwidth	41.67	62.5	62.5	50	62.5	62.5	41.67	31.25	31.25	31.25	41.67	31.25	41.67	62.5	62.5	31.25	31.25	31.25

USER CVS

Scan Description	C-spine SAGITTAL T1 FLAIR DL	T-spine SAGITTAL T1 FLAIR DL	L-spine SAGITTAL T1 FLAIR DL	C-spine SAGITTAL T2 DL	T-spine SAGITTAL T2 DL	L-spine SAGITTAL T2 DL	C-spine AXIAL 2D MERGE	C-spine AXIAL T1 .7pFOV	T-spine AXIAL T2 .7pFOV DL	T-spine AXIAL T1 DL .6pFOV	L-spine AXIAL T2 .7pFOV DL	L-spine AXIAL T1 .7pFOV DL	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	CV9: None CV11: None CV15: None CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV11: None CV15: 2 CV18: None CV21: 1 CV29: 1 CV30: 1 CV41: None	CV11: None CV15: None CV18: None CV21: 1 CV29: 1 CV30: 1 CV41: None	CV6: None CV7: None CV15: 0 CV18: None CV19: 1 CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV15: 1 CV18: None CV19: 1 CV21: 1 CV29: 1 CV30: 1 CV41: None	CV6: None CV7: None CV15: 0 CV18: None CV19: 0.8 CV21: 1 CV29: 1 CV30: 1 CV40: None	CV8: None CV19: None CV20: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 1 CV16: None CV18: 1 CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 1 CV16: None CV18: 1 CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: None CV16: None CV18: None CV19: 1 CV21: 1 CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: None CV16: None CV18: None CV19: 1 CV21: 1 CV29: 1 CV30: 1	CV6: None CV9: None CV15: None CV16: None CV18: None CV19: 1 CV21: 1 CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None	CV6: None CV9: None CV15: 2 CV16: 1 CV18: None CV21: None CV29: 1 CV30: 1 CV41: None
Scan Time	1-2 min	1-2 min	1-2 min	1-2 min	1-2 min	1-2 min	4 min	1-2 min	3-4 min	2-3 min	2-3 min	2-3 min	1-2 min	1-2 min	1-2 min	1-2 min	1-2 min	1-2 min

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