

Multimodal Protocol

22/09/2016

Version 2.3 SIOPE Brain Imaging Group

## Core Multimodal Protocol (Brain)

Modality		MRS			Diffusion				Perfusion			
Description		SVS (short-TE)			DTI				DSC - T2*			
Sequence		PRESS			EPI				GRE			
		Param	Value	Value	Param	Value	Param	Value	Param	Value	Param	Value
Fixed	Field	1.5 T	3 T		Field	1.5T	Field	3T	Field	1.5T	Field	3T
	TR (ms)	1500	2000		FOV (mm)	240	FOV (mm)	211	FOV (mm)	240x240x95	FOV (mm)	240x240x105
	Vector length	2048	2048		Acq matrix	96x96	Acq matrix	96x96	Acq matrix	96x96x19	Acq matrix	96x96x30
	TE (ms)	30			Resolution	2.5 isotropic	Resolution (mm)	2.2 isotropic	Orientation	axial	Orientation	axial
					Coverage	whole brain	Coverage	whole brain	Sense	2	Sense	2
				b factor	1000	b factor	1000	Temp resoln	1.49x60	Temp resoln	1.86sx60	
Variable	TE (ms)		30 - 35		TR (ms)	min	TR (ms)	min	Sequence	FE-EPI	Sequence	FE-EPI
	VOI (ml)	3.4 - 8 (to fit tumour)	2.2 - 8 (to fit tumour)		TE (ms)	min (fix BW?)	TE (ms)	min (fix BW?)	TE (ms)	40ms	TE(ms)	40ms
	BW (kHz)	2 or 2.5 kHz	2 or 2.5 kHz		Grad dirs	15+	Grad dirs	15+	TR (ms)	min	TR(ms)	min
	Aves(WS)	128 - 256	64 - 196		NSA (b=0)	1(3)	NSA (b=0)	1 (3)	flip angle	20 deg	flip angle	20 deg
	Aves (W)	8 - 16	8 - 16		Speed-up	x2	Speed-up	x2	Injection rate	3ml/sec	Injection rate	3ml/sec
					Partial Fourier		Partial Fourier		Gd-DTPA	0.1mmol/Kg 50% as pre bolus	Gd-DTPA	0.1mmol/Kg 50% as pre bolus
Time (mins)	Set-up		3	3					2		2	
	Acq		3.4 - 6.6	2.3 - 6.7					2		2	
	Total		6.4 - 9.6	5.3 - 9.7		5		3	4		4	
	<b>Total</b>	minimum at 3T - 8.3 mins + DSC										