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British HIV Association  
**BHIVA**

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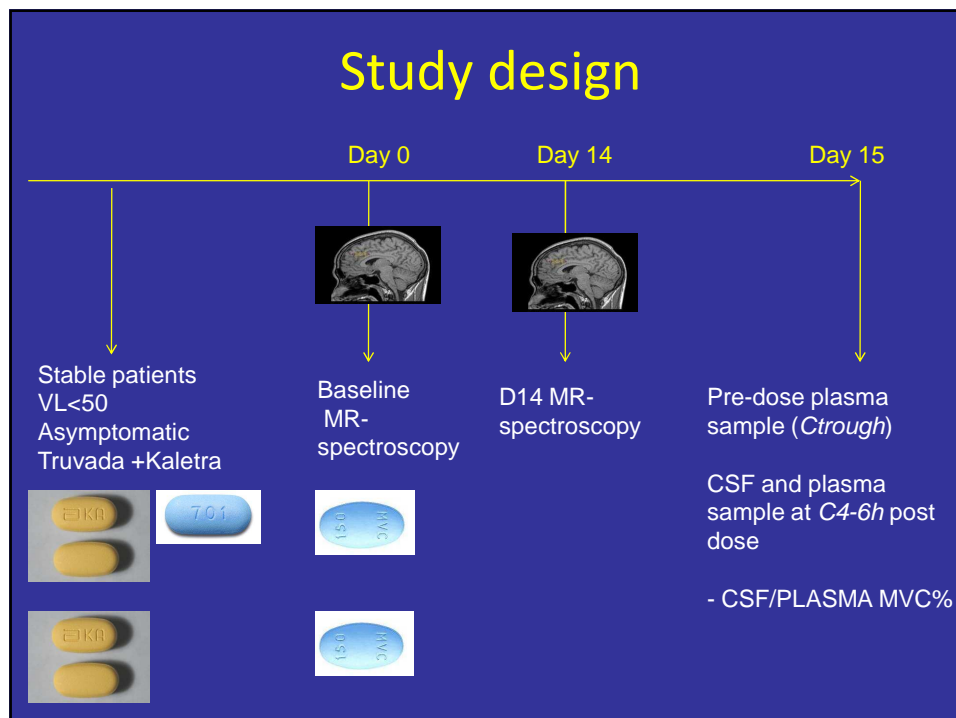
## The CNS Effects of Maraviroc: A Study to Assess CSF Exposure and Cerebral Metabolites

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Watson, S Kaye, D Back, S Taylor-Robinson and A Winston

## Background

- Factors including low protein-binding, high reported genital tract exposure and predominance of CCR5-tropic HIV in the CNS suggest MVC may have CNS antiviral activity
- Data describing MVC CSF exposure from cohort studies in varied clinical scenarios with confounding factors eg different ARV regimens and CNS disease
- No data assessing *in vivo* cerebral effects

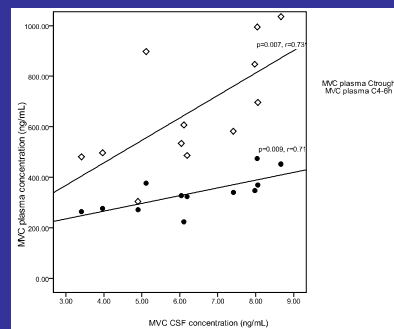
## Study design



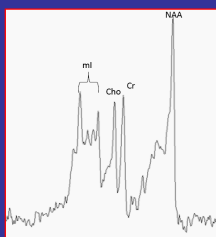
# Results

Number of subjects, n	12
Age (years), mean (SD)	42 (8)
Male, n (%)	9 (75)
CD4 count, mean (SD)	503 (199)
HIV VL <50 copies/mL, n(%)	12 (100)

	<b>MVC CSF:plasma ratio (%)</b>
<b>Mean</b>	<b>1.01</b>
<b>SD</b>	<b>0.29</b>
<b>CV(%)</b>	<b>28.92</b>



# Results- MRS



NAA= marker of neuronal integrity

Parameter Mean (SD)	Frontal grey matter			Frontal white matter			Right basal ganglia		
	NAA/Cr	Cho/Cr	ml/Cr	NAA/Cr	Cho/Cr	ml/Cr	NAA/Cr	Cho/Cr	ml/Cr
<b>Absolute change</b>	-0.02 [0.21]	0.02 [0.14]	0.01 [0.63]	0.00 [0.19]	0.00 [0.23]	0.17 [0.65]	<b>0.27</b> [0.61]	<b>0.14</b> [0.23]	<b>0.24</b> [0.60]

- Increase in basal ganglia NAA was significantly associated with higher MVC plasma Ctrough ( $p=0.047$ ,  $r=0.61$ )

## Summary

- MVC detected in CSF of all subjects (>5x median protein-free IC<sub>90</sub>) with MVC CSF:plasma ratio of 1.01% and changes in neuronal (NAA/Cr) metabolites associated with MVC plasma exposure
- This is the first study to describe a cerebral effect of MVC and a relationship to exposure
- Future work needed to investigate whether changes associated with cognitive function and assess these effects over longer periods, in both neuro-symptomatic and asymptomatic subjects