17TH ANNUAL CONFERENCE OF THE BRITISH HIV ASSOCIATION (BHIVA)

British HIV Association BHIVA

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Cerebral function in perinatally HIV infected young people and HIV uninfected sibling controls

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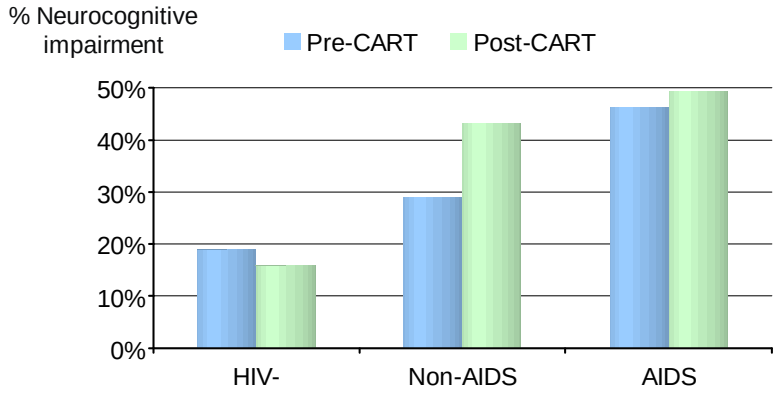
Prevalence of neurocognitive impairment in the pre-CART and post-CART eras



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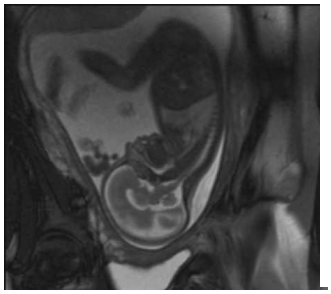
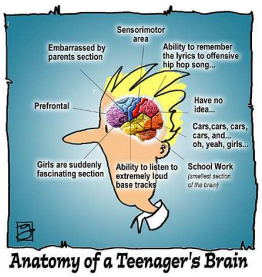
Effect of perinatal HIV infection on neurocognitive function





Neurodevelopment

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Aim

- The aim of this study was to characterise the neurocognitive functioning of young adults with perinatally acquired HIV (PaHIV) infection and compare with HIV negative siblings or close family members as aged matched controls

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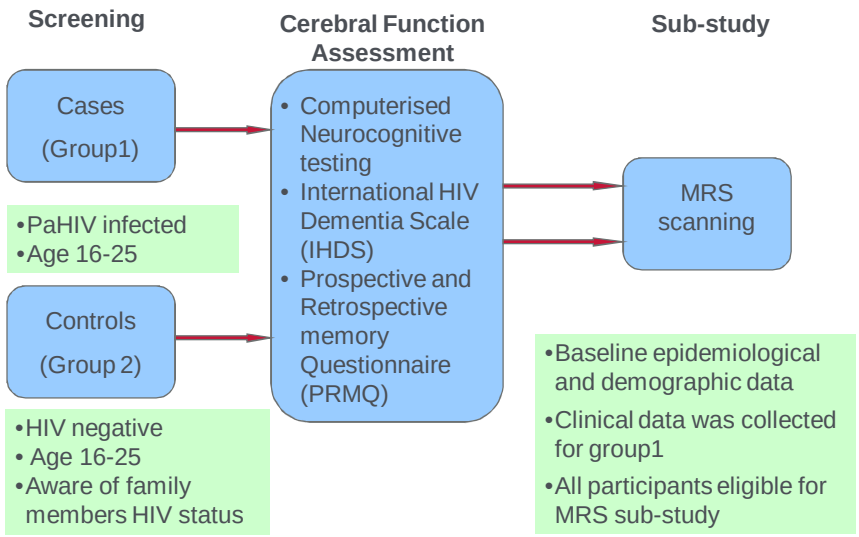
Study schedule



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Computerised neurocognitive testing (Cogstate™)

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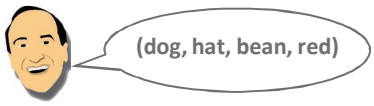
IHDS – International HIV dementia scale

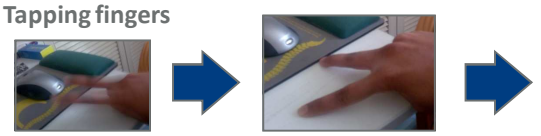
Consists of 3 parts

1. Memory recall of 4 words — Scored out of 4



1 point for every word remembered

2. Tapping fingers — Scored out of 4



No. of finger tapping complete in 15 secs recorded

3. Performing sequence with wrist — Scored out of 4

No. of times sequence complete in 15 secs recorded

AIDS. 2005 2;19(13):1367-74

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Prospective and Retrospective Memory Questionnaire (PRMQ)

	Item (1-16)	Score 1-5
1	Do you decide to do something in a few minutes time and then forget to do it?	
2	Do you fail to recognize a place you have visited before?	
3	Do you fail to do something you were supposed to do a few minutes later, even though it is there in front of you, like take a pill or turn off the kettle?	
4	Do you forget something you were told a few minutes before?	

Please score each question with a 5 point scale:

1. Never
2. Rarely
3. Sometimes
4. Quite often
5. Very often

Crawford et al The British Psychology Society 2006. 45, 83-104

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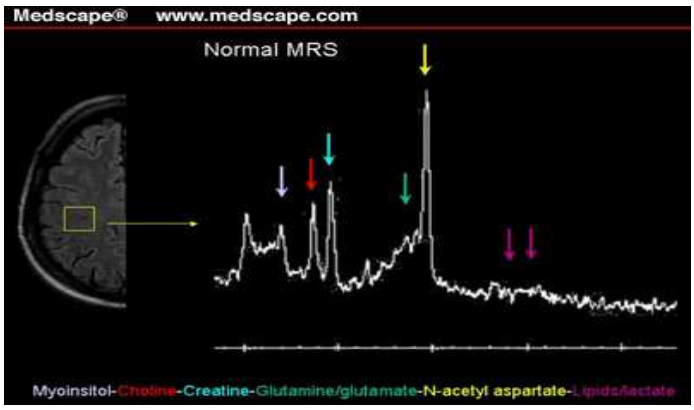
Magnetic Resonance Spectroscopy (MRS)



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Results - Baseline characteristics

Parameter	Group 1	Group 2
Number of subjects	33	14
Number of subjects undergoing MRS	8	4
Age, years (mean, range)	20 ,17-23	20,16-24
Black /Mixed Ethnicity %	85	86
Male gender, n (%)	11 (33)	4 (29)
Recent Recreational Drug use (%)	2 (6)	1(7)
Ever Recreational Drug Use (%)	13 (39)	6 (43)
English is first Language (%)	29 (88)	13 (93)
Number of years education (years)	14	15

Table legend; Mean values unless otherwise stated

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Results - HIV characteristics

Parameter	Group 1
Current plasma CD4 count (cells/uL,) (IQR)	444 (174-725)
Current plasma CD4 cell %	21
HIV VL <50 copies/ml, n, (%)	18 (55)
Age at HIV Diagnosis, years (IQR)	5 (0-9)
Years since HIV diagnosis (IQR)	15 (13-20)
Currently taking ARV, n (%)	26 (79)
Age at ARV commencement, years (IQR)	13 (8-16)
Years since first ARV treatment (IQR)	8.5 (4-13)

Table legend; mean values unless otherwise stated.
IQR= Interquartile range, VL = Viral Load, ARV = Antiretroviral therapy

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Results of cerebral testing

Domain	Best Score	Total score (n = 47)	Group 1 (n=34)	Group 2 (n=14)	*p* value*
Speed	low	10.64	10.66	10.57	0.27
Executive Function	low	17.83	18.18	17.00	0.68
Accuracy	high	3.02	3.03	2.99	0.78
IHDS	high	-	11.3	11.3	0.861
PRMQ (IQR)	low	-	**42** (36-49)	**35** (28-43)	**0.023**

Table legend; mean scores unless otherwise stated
PRMQ = Prospective and Retrospective Memory Questionnaire,
IHDS = International HIV Dementia Scale, IQR= Interquartile range;
**p* value for between group differences

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Magnetic Resonance Spectroscopy - Results

		Best score	Total score	Group 1 (n=8)	Group 2 (n=4)	*p* value
Right Basal Ganglia	Naa/Cr	High	2.01	2.13	1.77	0.17
	Chol/Cr	Low	0.76	**0.83**	**0.63**	**0.02**
	mI/Cr	Low	3.30	**3.43**	**3.03**	**0.09**

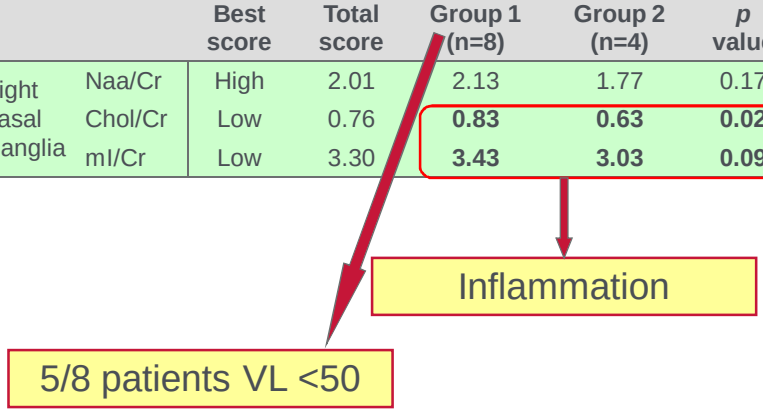

Table legend; Cr = creatine; Chol = choline; MI = myo-inositol; NAA = N-acetyl aspartate, **p* value for between group differences (p< 0.05 shown in bold)

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Conclusions

- Impairment in self reported memory
- Statistically significant increases in cerebral metabolite inflammatory factors
- No differences in computerized neurocognitive testing scores were observed between study groups

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Acknowledgements

- Thank you to the volunteers who participated in the study
- Thank you to all the 900 clinic staff
- Thanks to BHIVA - This study was partly funded from a study grant