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COMPETING INTEREST OF FINANCIAL VALUE \geq £1,000:	
Speaker Name	Statement
Alejandro Arenas-Pinto	Has acted as speaker at a company-sponsored event (Janssen-Cilag Ltd) and has received personal grants for attending conferences and research from Abbott, Bristol-Myers Squibb and Janssen-Cilag Ltd
Date	April 2013

Neurocognitive test results from contemporary trials: what do they tell us?

Alejandro Arenas-Pinto
MRC- Clinical Trials Unit and
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Factors reported to be associated with Neurocognitive Impairment (NCI)

- Nadir CD4 cell count^{1,2}
- Baseline HIV-RNA > 1,000,000 copies/ml²
- Preexisting CVD³
- Education level⁴
- Central obesity⁵

Cross-sectional data

Lack of appropriate comparator group

Lack of universally accepted criteria for NCI

Little information on effect of ART interventions

1. Ellis et al *AIDS* 2011; **25**: 1747 - 51

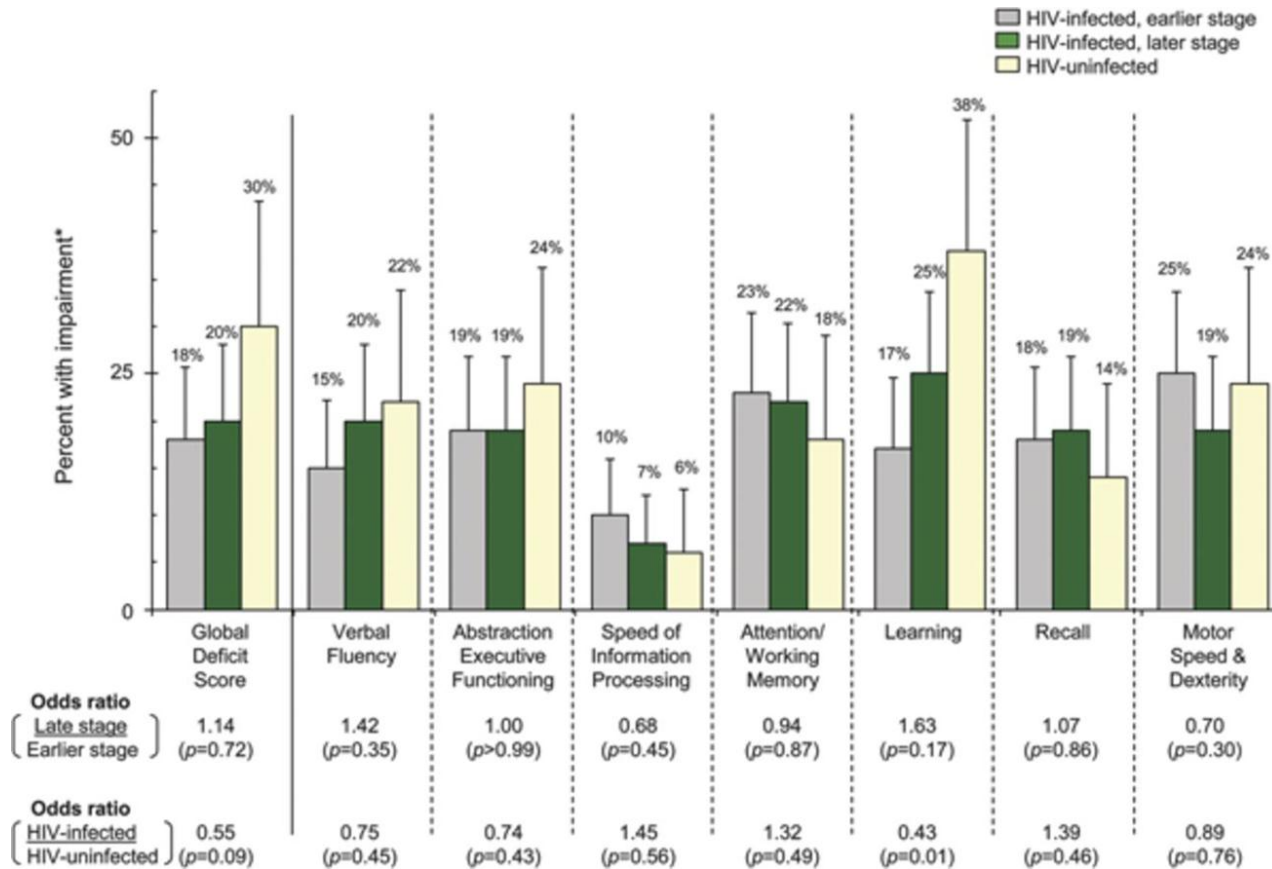
2. McCombe et al *HIV Med* 2013; **14**: 99 – 107

3. Wright et al *Neurology* 2010; **75**: 864-73

4. Bonnet et al *AIDS* 2013; **27**: 391 – 400

5. McCutchan et al *Neurology* 2012; **78**: 485 - 92

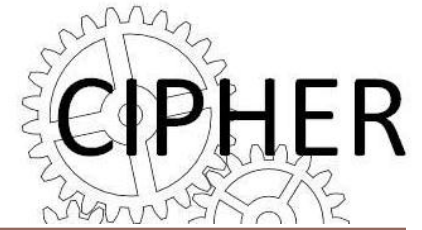
The prevalence of neurocognitive impairment in HIV-infected patients may be lower than previously reported



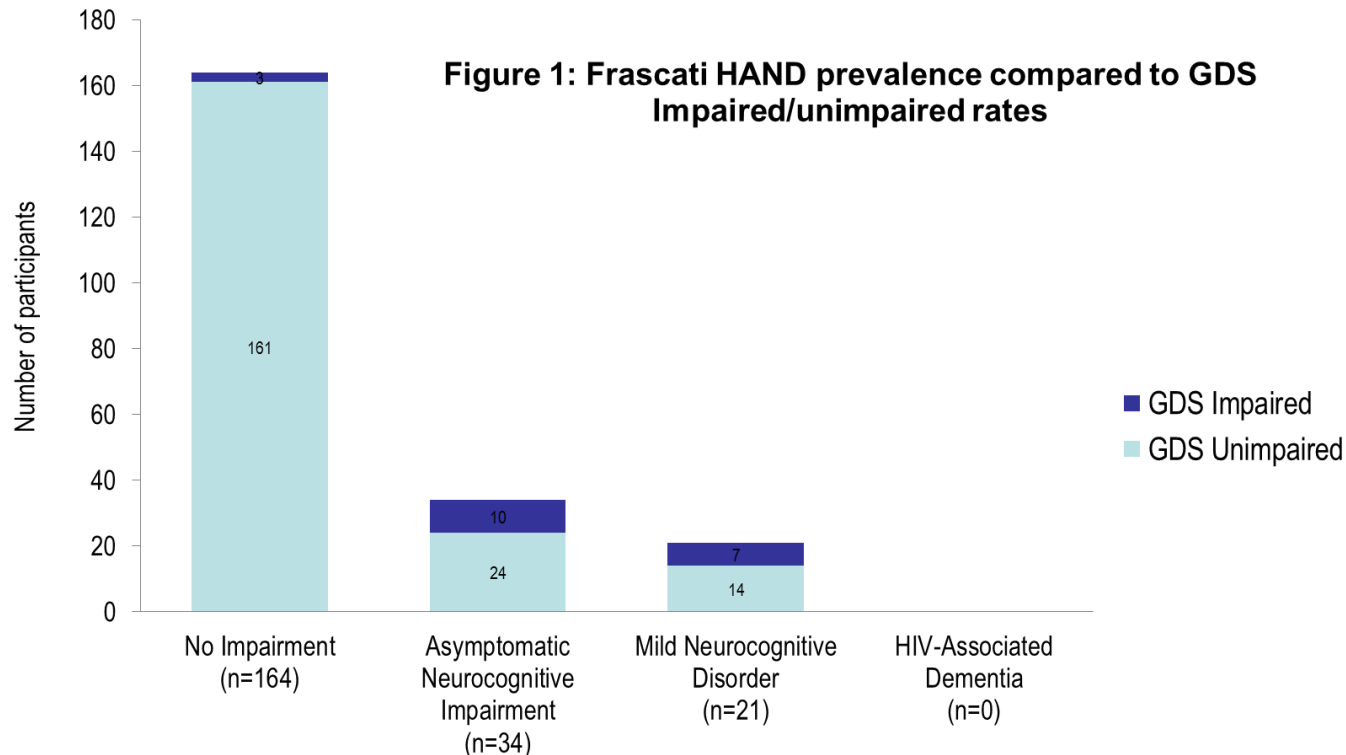
- Cross-sectional (N= 200)
- Early stage (<6 years)
- HIV-uninfected Controls (N= 50)
- 8 cognitive domains
- Only factor associated with NCI:

Longer time on education
 (OR 1.24 per year; p 0.02)

Cognitive Impairment in People with and without HIV in the European Region



- Assess if mild neurocognitive defects in HIV positive and HIV negative MSM are associated with increased risky sexual behaviours



- Cross-sectional (N= 1,200)
- UK, Italy, Poland, Belarus and Denmark
- HIV-uninfected Controls (UK)
- CogState plus Verbal fluency and executive functioning

Longitudinal data

- Cohort studies looking at specific population groups



Adolescents and Adults Living with Perinatal HIV Cohort (AALPHI)



HIV-infected group (N= 400)

HIV-negative group (N= 300)

- Living in the same household as case or have an HIV positive parent or sibling

Study questions

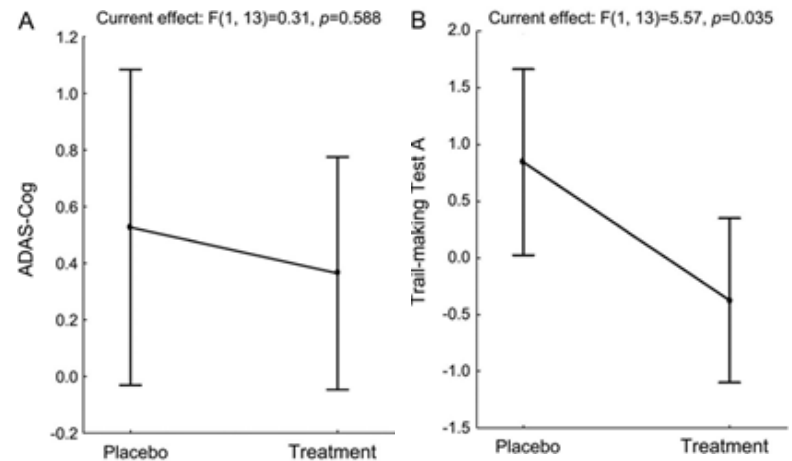
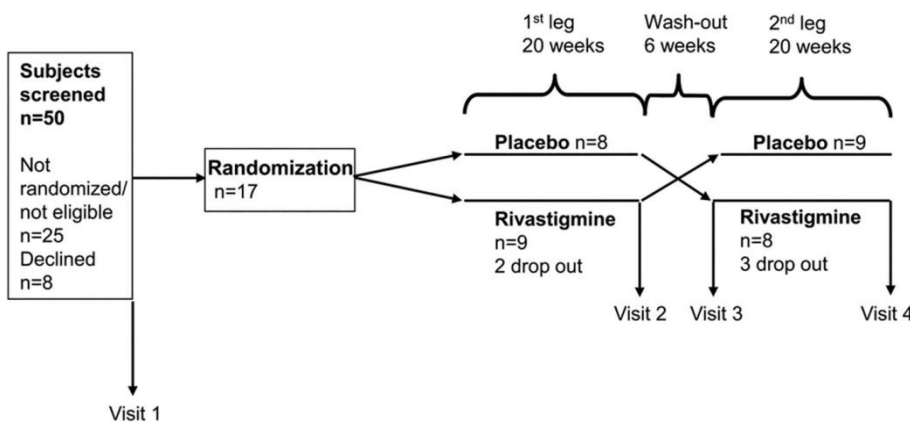
- Neurocognitive function and psychosocial issues
- Cardiovascular disease
- Metabolic complications
- Sexual and reproductive health
- Anthropometry and body composition

Neurocognitive testing

- 7 Cognitive domains
- Depression (HAD scale)
- QoL
- Recreational drug use
- Alcohol intake
- Self-harm
- Other risky behaviours

Randomised data

- Management of HIV-associated CI



Rivastigmine improves psychomotor speed and, marginally, executive functioning in HIV+ patients with HAND and undetectable HIV viral load in both plasma and CSF

Maraviroc Intensification Leads to Improvement in Neurocognitive Test Performance and Declines in Immune Activation

- Single arm study (N=12)
- Secondary endpoint:
 - Change in neuropsychological testing performance at week 24
- Virologically suppressed patients
- MVC intensification for 24/52

- Modest improvement on NPZglobal score (mean 0.26) from baseline to week 24
- Performance in tests measuring psychomotor speed particularly better in impaired patients

A Simplification Study of unboosted ATV with ABC/3TC (ASSURE)

Figure 1. ASSURE Study Design

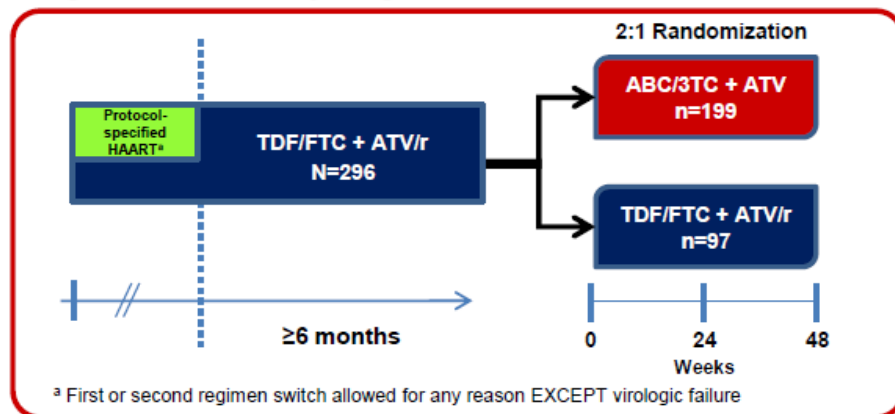
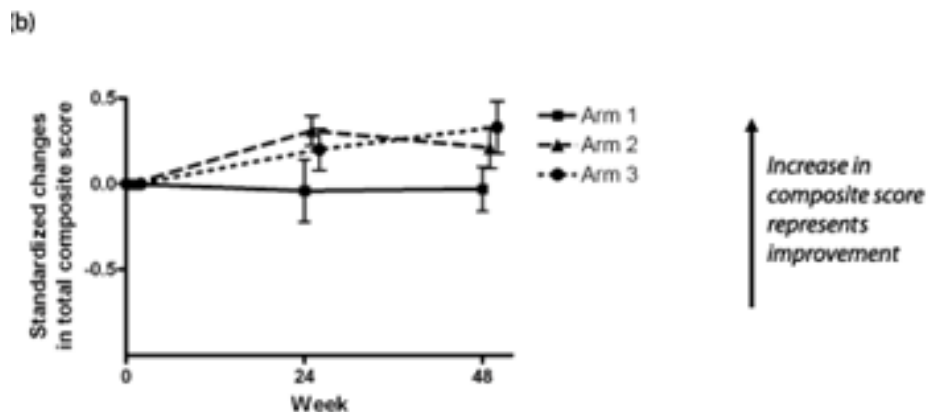
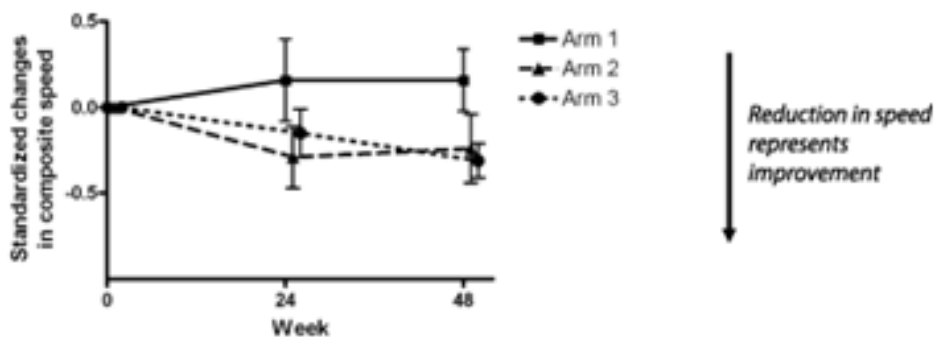


Table 3. Summary and Comparison of Cognitive Outcomes at Week 24 Between the Two Treatment Groups (ITT-E)

Outcome variable	Adjusted mean difference	95% CI	Cohen's effect size	P value
Detection	0.004	-0.025, 0.033	0.036	0.788
Identification	0.016	-0.005, 0.036	0.197	0.142
One card learning	-0.006	-0.030, 0.018	-0.062	0.644
One back card	0.013	-0.011, 0.037	0.144	0.280
Neuropsychological composite Z score	-0.132	-0.354, 0.090	-0.156	0.244

Cognitive function change overtime: the Altair trial

- To assess the dynamics of neurocognitive function changes over 48-week period within a neurologically asymptomatic ART naïve patients



- RCT (N= 28)
- TDF/FTC with EFV, ATV/r or AZT/ABC
- 7 cognitive domains at BL, W24 and W48
- Overall improvements in NC function
- Greater improvement in groups 2 and 3:

A drug effect?

On-going RCT exploring cognitive function

- ART naïve patients:



TDF/FTC/DRV/r
vs.
RAL/DRV/r

N= 400 (200 per arm)
Baseline and week 96

- Early ART initiation:



CD4 \geq 500 cell/ml
vs.
CD4 \geq 350 cell/ml

N= 600 (300 per arm)
Baseline, months 4,8
and annually

On-going RCT exploring cognitive function (2)

- ART experienced patients:



PI/2NRTI vs.
PI/RAL vs.
PI monotherapy

N= 1,277 (Africa)
Baseline, and annually



PI monotherapy
vs.
Standard cART

N= 576 (random 1:1)
Baseline, week 12
and annually

The logo of the British HIV Association (BHIVA) is a circular emblem with a complex, geometric pattern of lines and dots, resembling a stylized sun or a molecular structure. It is positioned behind the text.

British HIV Association
BHIVA

A light blue map of the United Kingdom is visible in the background. A red circular marker is placed on the map, indicating the location of Manchester in the north-west of England.

**19th Annual Conference of the
British HIV Association (BHIVA)**

16–19 April 2013

#BHIVA2013

Manchester Central Convention Complex