

University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

This paper is made available online in accordance with publisher policies. Please scroll down to view the document itself. Please refer to the repository record for this item and our policy information available from the repository home page for further information.

To see the final version of this paper please visit the publisher's website. Access to the published version may require a subscription.

Author(s): M Boothby, AM Umpleby, F Shojaee-Moradie, JW Tomlinson, LL Gathercole, K McGee, S Das and M hahmanesh

Article Title: HIV infection significantly reduces lipoprotein lipase which remains low after 6 months of antiretroviral therapy

Year of publication: 2008

Link to published version: <http://dx.doi.org/10.1186/1758-2652-11-S1-P113>

Publisher statement: None

Poster presentation

## HIV infection significantly reduces lipoprotein lipase which remains low after 6 months of antiretroviral therapy

M Boothby\*<sup>1</sup>, AM Umpleby<sup>2</sup>, F Shojaee-Moradie<sup>2</sup>, JW Tomlinson<sup>3</sup>, LL Gathercole<sup>3</sup>, K McGee<sup>4</sup>, S Das<sup>5</sup> and M Shahmanesh<sup>6</sup>

Address: <sup>1</sup>Whittall Street Clinic, Birmingham, Birmingham, UK, <sup>2</sup>Postgraduate Medical School, University of Surrey, Guilford, UK, <sup>3</sup>University of Birmingham, Birmingham, UK, <sup>4</sup>Warwick University, Warwick, UK, <sup>5</sup>University Hospital Coventry and Warwickshire, Coventry, UK and <sup>6</sup>University Hospital Birmingham, Birmingham, UK

\* Corresponding author

from Ninth International Congress on Drug Therapy in HIV Infection  
Glasgow, UK. 9–13 November 2008

Published: 10 November 2008

*Journal of the International AIDS Society* 2008, **11**(Suppl 1):P113 doi:10.1186/1758-2652-11-S1-P113

This abstract is available from: <http://www.jiasociety.org/content/11/S1/P113>

© 2008 Boothby et al; licensee BioMed Central Ltd.

### Purpose of the study

Fractional clearance rate of apolipoprotein B100-containing lipoproteins is reduced in HIV infection before and after antiretroviral (ARV) treatment [1]. We compared lipoprotein lipase (LPL) activity and gene expression in HIV-positive subjects before and 6 months after ARV with HIV-negative controls.

### Methods

Fasting blood post heparin total and hepatic lipase activity, adiponectin, leptin, insulin, glucose, and lipid measurements were made in 32 HIV-infected and 15 HIV-negative controls. LPL was estimated by subtracting hepatic lipase from total lipase. Adiponectin, LPL and hormone sensitive lipase (HSL) gene expression were measured from iliac crest subcutaneous fat biopsies. Patients were tested before, and 6 months after randomisation to AZT/3TC (n = 15) or TDF/FTC (n = 17) with EFV. Between-group comparison was by Mann-Whitney and paired samples by the Wilcoxon signed rank tests.

### Summary of results

There were no differences in gender, ethnicity, baseline BMI, regional fat distribution (whole body DEXA) and visceral (VAT) and subcutaneous fat (SAT) measured by abdominal CT scans between controls and patients. Trunk fat/BMI ratio, VAT and VAT:SAT ratio significantly increased after 6-month ARV therapy (p = 0.01). There were no differences between groups in serum NEFA,

HOMA and leptin levels. Selected other results are shown in Table 1.

### Conclusion

Post heparin lipoprotein lipase activity is reduced in HIV and does not return to control levels after 6 months of ARV therapy. AZT-containing regimens are associated with a greater increase in LPL, LPL gene expression and plasma adiponectin than TDF.

### References

1. Shahmanesh M, et al.: **Antiretroviral treatment reduces very-low-density lipoprotein and intermediate-density lipoprotein apolipoprotein B fractional catabolic rate in human immunodeficiency virus-infected patients with mild dyslipidemia.** *J Clin Endocrinol Metabol* 2005, **90**:755-60.

**Table 1: Measurements are mean (+/- SD). RNA expressions are in arbitrary units. \* control vs. HIV naïve, \*\* control vs. HIV 6 mth \*\*\* HIV naïve vs. HIV 6 mth.**

	Control	HIV Naive	HIV AZT 6 m	HIV TDF 6 m	p all HIV 6 m
Adiponectin ug/ml	8.2 (4.9)	10.3 (4.1)	13.3 (6.8) **p = 0.025, ***p = 0.05	9.4 (3.3)	**0.04, ***0.01
Hepatic lipase nmol/ml/h	200 (119)	126 (80)	148 (110)	137 (93)	NS
LPL nmol/ml/h	528 (151)	297 (107) *p = 0.0001	382 (212) **p = 0.05, ***p = 0.05	341 (167) **p = 0.12	**0.008
LPL mRNA	173 (106)	188 (97)	187 (68) **p = 0.05	167 (114) **NS	**0.004, ***0.007
HSL mRNA	0.38 (0.29)	0.38 (0.29)	1.2 (1.5) **p = 0.05, ***p = 0.05	1.3 (1.6) **p = 0.02, ***p = 0.015	**0.02, ***0.001
Adiponectin mRNA	30.9 (25.4)	26.1 (9.1)	39.4 (20.1) ***p = 0.09(NS)	33.2 (10.8) ***p = NS	NS

Publish with **BioMed Central** and every scientist can read your work free of charge

*"BioMed Central will be the most significant development for disseminating the results of biomedical research in our lifetime."*

Sir Paul Nurse, Cancer Research UK

Your research papers will be:

- available free of charge to the entire biomedical community
- peer reviewed and published immediately upon acceptance
- cited in PubMed and archived on PubMed Central
- yours — you keep the copyright

Submit your manuscript here:  
[http://www.biomedcentral.com/info/publishing\\_adv.asp](http://www.biomedcentral.com/info/publishing_adv.asp)

