Multi-omic analysis identifies dyslipidaemia in juvenile-SLE patients associated with disease activity, inflammation and atherosclerosis

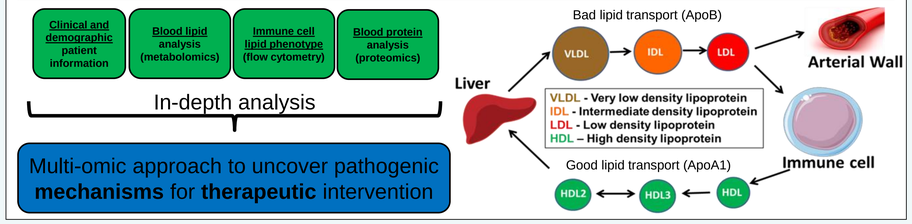
George A Robinson[1,2], Junjie Peng[1,2], Kirsty E Waddington[1,3], Anna Radziszewska[2], Filipa Farinha[1], David A Isenberg[1,2], Yiannis Ioannou[2], Coziana Ciurtin[1,2†], Ines Pineda-Torra[3†], Elizabeth C Jury[1†]
[1]Rheumatology, [2]Centre for Adolescent Rheumatology Versus Arthritis, [3]Cardiometabolic & Vascular Science, Division of Medicine, University College London. †Share senior authorship.

Introduction:

- 15-20% of all systemic lupus erythematosus (SLE) patients have **juvenile-SLE (JSLE)** which is associated with more severe disease
- JSLE is characterised by **immune cell dysregulation**, chronic inflammation and an **increased risk of developing cardiovascular disease (CVD)**
- **CVD through atherosclerosis** (arterial wall lipid build up and chronic inflammation) is a **leading cause of mortality in JSLE**
- Previous work links **immune dysregulation** with **dyslipidaemia** in adult-SLE
- Little is known about the role of **lipid metabolism in JSLE and atherosclerosis**

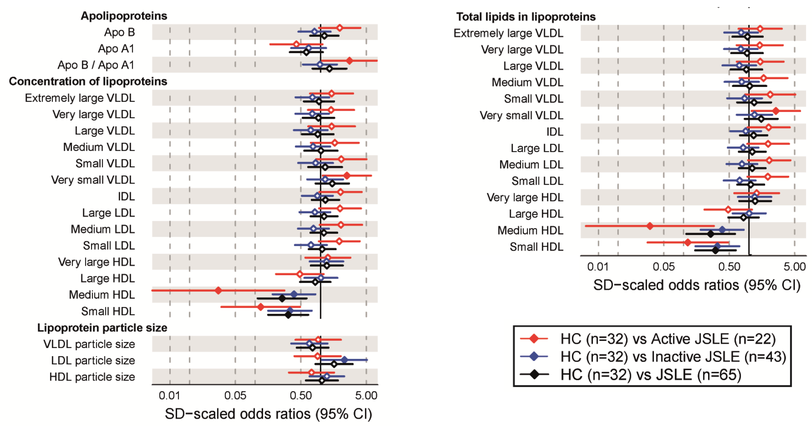
Aims/Methods:

	HC	JSLE	p value
Total number	32	65	-
Age, mean (range)	19 (16-25)	19 (13-25)	0.61

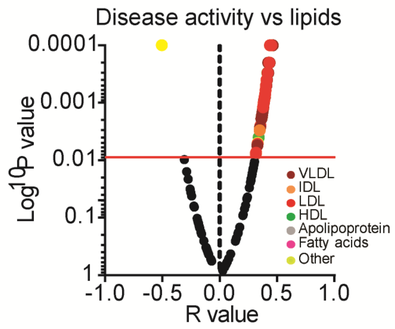


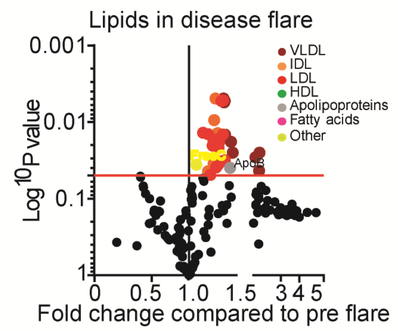
Results:

1. Dyslipidaemia is present in young JSLE patients and is exacerbated by increased disease activity (SLEDAI)

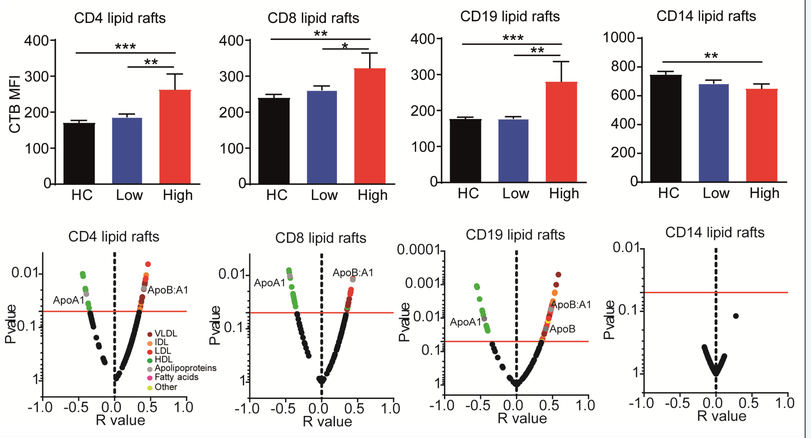


2. Atherogenic lipoproteins correlate with disease activity score and are increased during a flare

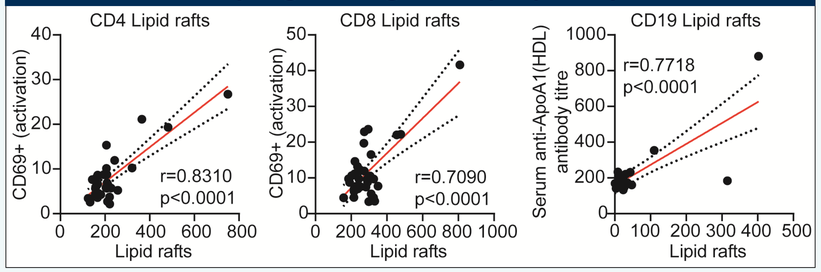




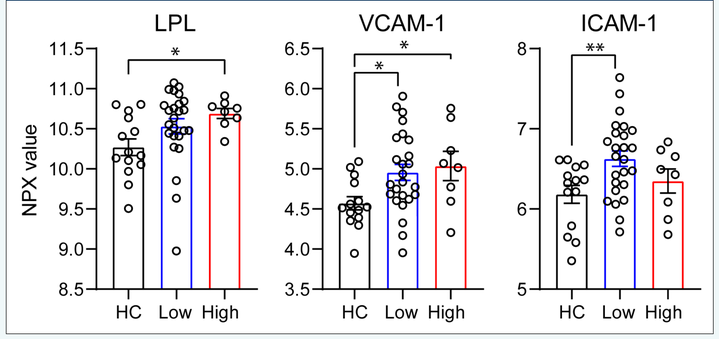
3. Atherogenic and atheroprotective lipoproteins correlate with cellular lipid raft signalling platforms



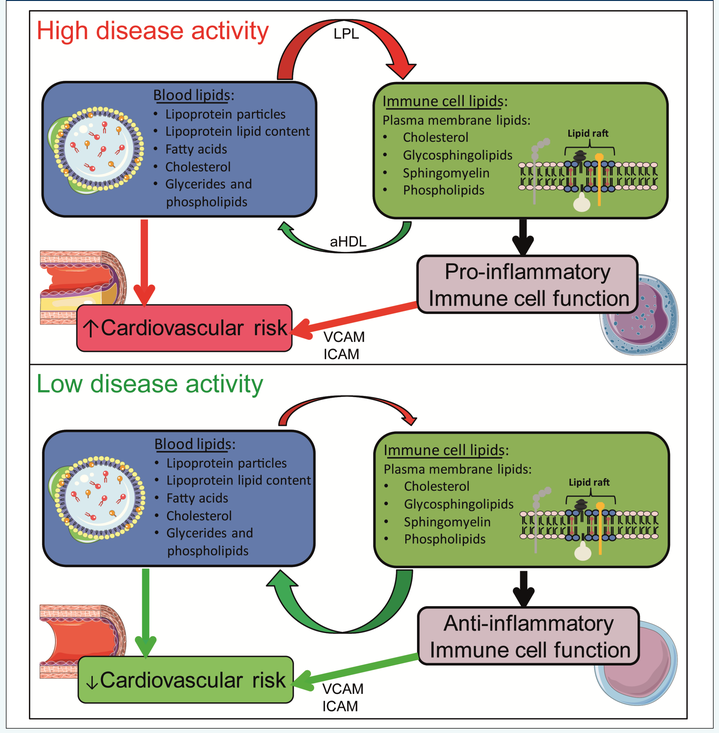
4. This may have implications for downstream inflammatory signalling and lymphocye function



5. Lipoprotein lipase (LPL) and vascular markers are associated with disease activity



Summary hypothesis:



Multi-omic analysis identified potential early mechanisms of dyslipidaemia in JSLE patients associated with disease activity, inflammation and atherosclerosis

Email contact: george.robinson.15@ucl.ac.uk
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