

Metabolic health of young adults with perinatally acquired HIV - an unknown need?

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Background:

Metabolic and cardiovascular determinants are of increasing importance as people living with HIV age. Young adults with perinatally acquired HIV (YAPAH) often have early and long exposure to anti-retroviral therapy (ART) and HIV related immune activation. Metabolic effects of ART are well described but little is known about the long term implications in this unique cohort and how we might reduce HIV and ART related metabolic morbidity and mortality.

Aim: To describe the metabolic determinants in a cohort of YAPAH.

Methods:

Retrospective case notes review of all YAPAH attending an inner-city HIV clinic. Statistical analysis was carried out using excel and R studio.

Metabolic Syndrome:

Overall incidence is increasing with 1 in 4 people in the western population having the condition¹

Diagnostic criteria:

Any three of the following²:

- ❖ Elevated waist circumference (population and country specific) or BMI >30

	Women	Men
Caucasian	>80 cm	>94cm
Sub-Saharan African	>80 cm	>94cm

- ❖ Triglycerides >1.7 mmol/L (>150mg/dL)
- ❖ HDL-cholesterol <1.04 mmol/L in men | <1.29 mmol/L in women
- ❖ Fasting glucose >5.6 mmol/L
- ❖ BP >130/85

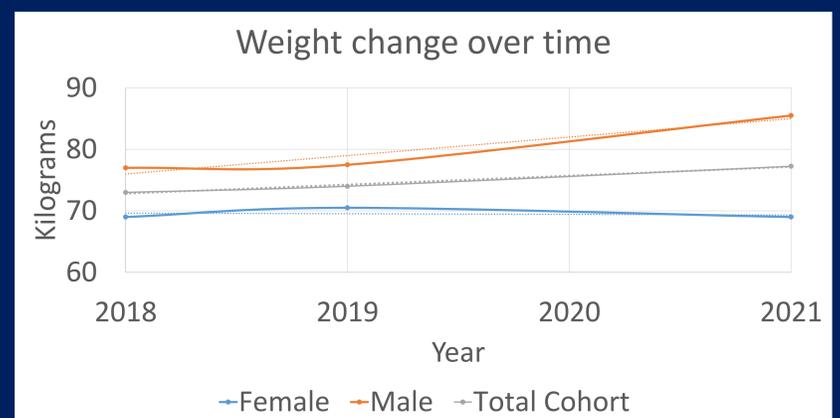
Results: 53 patients were identified. Median BMI was 28 (range 18.5-52). 68% (36/53) were overweight or obese. 68% (36/53) of the cohort live in areas of high deprivation (1-3). Over 2 years there was a 4% (3kg) weight increase on average in the cohort (range -17% - 35%).

	Number	Percentage
Median Age	25 years Range 19-35 years	
Gender	Female Male	35/53 18/53
		66% 34%
Ethnicity	Black Mixed Other/unknown	44/53 4/53 5/53
		83% 8% 9%
Median BMI	28	Range 19-52
Anti-retrovirals	TAF PI/b INSTI Prior d-drug LAI (CAB/RIL)	36/53 28/53 24/53 19/53 2/53
		68% 53% 45% 36% 4%

	Number	Percentage
BMI	Normal weight Overweight Obesity	17/53 19/53 17/53
		32% 36% 32%
Systolic Blood Pressure (2 separate readings)	Normotensive (<120) Raised (120-129) HTN1 (130-139) HTN2 (>140)	23/53 10/53 5/53 8/53
		43% 19% 9% 15%
Random blood glucose	Normal	53/53
		100%
Triglycerides	>1.7	9/53
		17%
HDL	<1.04 men <1.29 women	2/18 13/35
		11% 37%
Metabolic syndrome	Meets >3 criteria	3/53
		6%

There was no correlation between higher score for deprivation and higher BMI using fishers T test (p= 1.0).

Multivariate regression modelling showed no correlation between BMI and TAF and/or second generation integrase inhibitors.



Conclusion:

Deprivation and obesity in this unique cohort are markedly high, with weight gain particularly over the last 2 years which may have been influenced further by the COVID-19 pandemic.

We found 3/53 (6%) of our cohort met the criteria for metabolic syndrome. However, fasting blood glucose and waist circumference are not routine within our clinic limiting our ability to identify patients at risk of metabolic syndrome

In this small cohort we did not find a link between weight and ART choice.

High cholesterol and BP may lead to increased cardiovascular risk as this cohort ages, however traditional metabolic stratification such as Qrisk3 are not validated under 25 years old.

Reducing progression to metabolic syndrome is vital for long term health outcomes in YAPAH and highlights the need for screening and interventions.

References:
1. <https://bestpractice.bmj.com/topics/en-gb/212/>
2. Alberti KG, Zimmet P, Shaw J. Metabolic syndrome--a new world-wide definition. A Consensus Statement from the International Diabetes Federation. Diabet Med. 2006 May;23(5):469-80. doi: 10.1111/j.1464-5491.2006.01858.x. PMID: 16681555.