Suggestions for future research A future challenge for public health is how to further convince patients of the benefits of LTBI treatment. Future research should focus on how to provide an integrated health service to maximize uptake and completion of chemoprophylaxis for maximum societal benefit.

Disclosure of interest The authors declare that they have no competing interest.

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S12.6

Risk of HIV infection in a cohort of men who have sex with men attending CheckpointLX in Lisbon, Portugal

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Introduction To accurately measure incidence it is essential to define precisely the timing of infection. However, in presence of interval-censored survival data, in which the event date is not exactly known, but is known to lie within an interval, timing of infection often needs to be estimated. One common approach is to use the mid-point between last negative and first positive test assuming that event of interest has a uniform distribution. However, when testing intervals are not fixed the mid-point method may not be a good estimate of infection date. Alternative approaches taking into account this uncertainty regarding the date of infection must be used. These include non-parametric estimators such as the Turnbull's algorithm that we used to estimate the risk of HIV infection among MSM.

Methods We used data from the Lisbon Cohort of MSM–a dynamic prospective cohort assembled since April 2011. The cohort is set up and conducted at CheckpointLX, a community-based HIV testing and counseling (CBVCT) center tailored for MSM run by trained peer counselors. The cohort recruits males reporting sex with other men, aged 18 or more, and HIV-negative at recruitment. For the survival analysis the nonparametric estimator of Turnbull was applied and the values of the estimator were obtained using the expectation-maximization algorithm. The analysis were conducted using the Icens R package.

Results From April 2011 to June 2017, 5631 HIV-negative adult MSM were eligible for follow-up of whom 2387 had at least one follow-up visit. During follow-up 99 incident HIV infections occurred. From the survival analysis, the probability that the HIV infection occurred at 430 days of follow-up was equal to 0.03 and after 1827 days, approximately 5 years of follow-up, was 0.08. The risk of infection at the first two years decreased 0.05 while at the end of three years of follow-up the risk decreased 0.06 and standing at 0.92 of probability of survival at the end of the follow-up considered in this study.

Conclusions We observed that the survival of HIV infection in the Portuguese cohort based in a CBVCT in Lisbon decreased slower as the person-time of follow-up increased. The major decrease on the survival function appeared at the first two years of follow-up (1 to 0.96). Three major causes can operate: the effect of risk reduction counseling and participation in a cohort study; the effect at community level of treatment as prevention and access to pre- and post-exposure prophylaxis; and differential losses-to follow-up.

Disclosure of interest The authors declare that they have no competing interest.

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Session 13–Risk factors, treatment and prevention of chronic diseases

Thursday the 5th of July, 2018 – 03:30 pm–05:00 pm

S13.1

Metabolic mediators of the relationship between adiposity and cardiac structure and function in UK adolescents

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Introduction Strong evidence shows that adiposity increases cardiovascular disease (CVD) risk, explained in part by blood pressure (BP), glucose, triglycerides and cholesterol. Metabolomics offers the potential to identify novel intermediate pathways.

Methods Body mass index (BMI) was measured at age 11 in the Avon Longitudinal Study of Parents and Children. Measures of cardiac structure (precursors of CVD; age 17) were left atrial size indexed to height (LAI), left ventricular mass indexed to height$^{2.7}$ (LVMI), relative wall thickness (RWT) and left ventricular internal diameter (LVIDD). Metabolic traits (mostly lipid and lipoprotein related) were quantified via high-throughput 1H-nuclear magnetic resonance spectroscopy (NMR) at age 15. Complete data was available for all exposures, mediators and outcomes ($n = 772$). Multiple imputation was used to deal with missing data in covariates. Multivariable linear regression was used to estimate associations of BMI with measures of cardiac structure. Mediation was assessed via controlled direct and natural indirect effects, firstly, considering 156 metabolic measures individually, and secondly considering all metabolites jointly (as principle components, $n_{pc} = 17$). Bootstrapping was used to calculate robust standard errors.

Results A one-unit higher BMI was associated with 0.74 (0.54, 0.94) higher LVMI in males; 0.68 (0.52, 0.84) in females. Individually, each metabolite explained little of this association. Jointly, the PCs of the metabolites explained 8% of the association in males and 0.8% in females. Similar results were seen for LAI and LVIDD. There was weak evidence of an association of BMI on RWT.

Conclusion In this adolescent population, individual metabolites measured by NMR contribute a small amount to the pathway from adiposity to cardiac structure. Considering them jointly indicates they may play a role in the pathway, particularly in males; further work is warranted to assess causality.

Disclosure of interest The authors declare that they have no competing interest.

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S13.2

Association between lifestyle risk factors and incident hypertension among middle-aged and older Australians

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Background Few studies have examined the combined influence of modifiable lifestyle risk factors on the development of hypertension. The objectives of this study were to examine the association between individual and combined lifestyle risk factors and the incidence of hypertension (1) in middle-aged and older Australians, and (2) to compare findings in men and women.