Dysglycaemia is Prevalent in HIV Patients over 40 and may be Detected using Routine Screening for Cardiovascular Risk

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INTRODUCTION

Dysglycaemia has been demonstrated to affect people living with HIV disproportionally compared to seronegative cohorts [1]. Suggested reasons implicated for this include pro-inflammatory viral factors and antiretroviral regimen side-effects. The current UK guidelines recommend that all PLWH over the age of 40 are screened annually for metabolic comorbidities including glycated haemoglobin (HbA1c) for diabetes risk [2].

However, it is unknown whether these guidelines are best suited for all cohorts with a diversity of age and ethnicity. Secondly, access to HbA1c screening may not be universal or may not be routinely measured in clinical practice.

HYPOTHESIS & AIMS

Rates of dysglycaemia vary between different age groups in PLWH and cardiovascular risk tools can detect those individuals at risk

We aimed to investigate the prevalence of pre-diabetes and type 2 diabetes (T2DM) in PLWH, and to assess whether the cardiovascular risk tool QRISK2 can identify PLWH at risk of diabetes.

DESIGN & METHODS

A cohort of adults living with HIV was purposively sampled in order to represent the demographic of three large South London clinics.

Baseline demographic, anthropometric and routine clinical data were gathered and analysed. Glycaemic status was established using WHO criteria for normoglycaemia, pre-diabetes and T2DM (fasting glucose <6.0, 6.0-6.9, and ≥7.0 mmol/l respectively) or by previous diagnosis. QRISK2 [3] was used to calculate 10-year cardiovascular risk.

Continuous variables were checked for normality, and chi-squared and ANOVA tests used to estimate the strength of relationships. The sensitivity and specificity of QRISK2 scores for predicting prediabetes was estimated using a receiver operator characteristic (ROC) curve, excluding all patients with confirmed T2DM.

RESULTS AND DISCUSSION

Of the 338 patients recruited, 74% identified themselves as male (n=250) and 26% as female (n =88). There was significant ethnic diversity exhibited in this cohort (Figure 1) but it was not significantly associated with dysglycaemia (p=0.751).

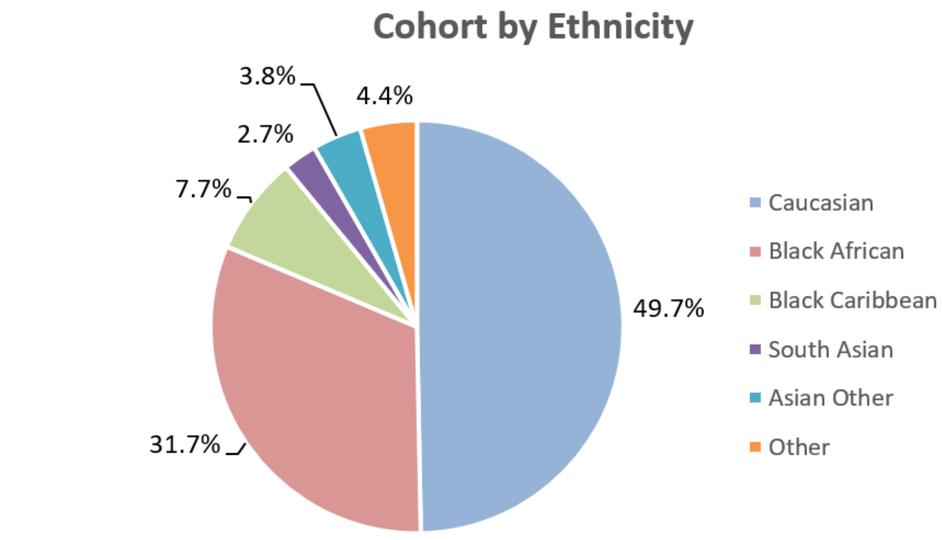

Figure 1. Cohort by ethnicity

32% of our cohort had dysglycaemia, comprising of 17% and 15% prediabetes and Type 2 Diabetes respectively. Splitting the cohort by age deciles suggest that the prevalence of dysglycaemia increases significantly after the age of 40 (p<0.001) (Figure 2).

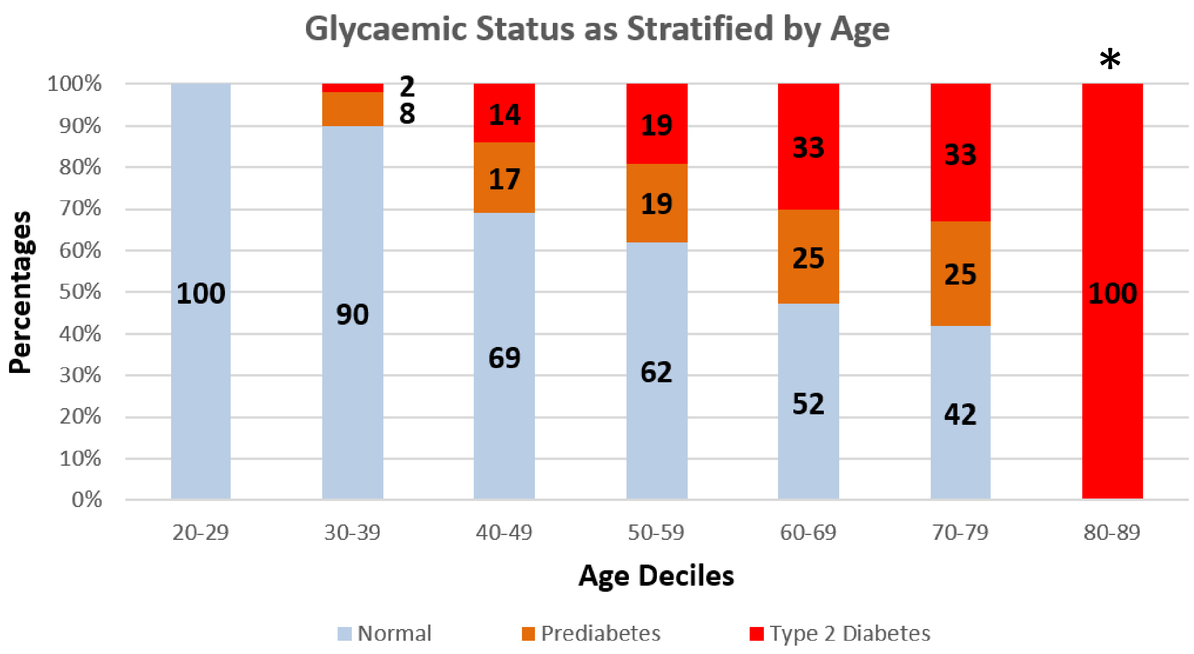

Figure 2. Glycaemic Status as Stratified by Age

*** n=1 in cohort**

ROC curve analysis for those with prediabetes over the age of 40 (n=53) estimated an area under the curve of 0.653 (95% Confidence Intervals: 0.582, 0.725; p<0.001), with a 10-year CVD risk of ≥4% suggesting a sensitivity of 72% and a specificity of 51% for increased diabetes risk (Figure 3 and 4).

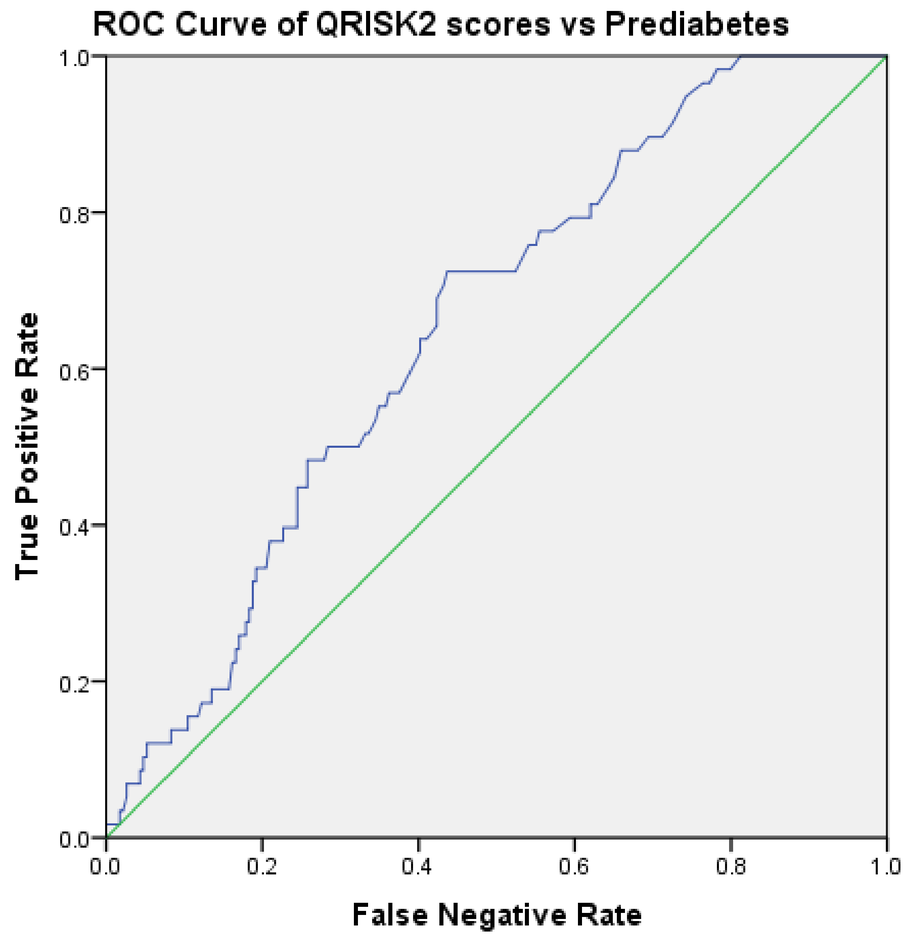

Figure 3. ROC Curve of QRISK2 score in Prediabetes

QRISK2 %	Sensitivity	Specificity
1	0.983	0.201
3	0.776	0.428
4	0.724	0.511
5	0.638	0.590

Figure 4. Sensitivities and Specificities of QRISK2 scores

CONCLUSIONS

1. Our findings provide extra evidence that annual diabetes risk assessment should be routine in PLWH > 40 years in accordance with the current BHIVA guidelines.
2. For individuals without glycated haemoglobin results, a 10-year QRISK2 cardiovascular risk of 4% or more may be used as a surrogate marker to screen for those at high risk of undiagnosed prediabetes or T2DM and warrant more urgent further investigations.
3. In light of the updated QRISK3 risk tool [4], further evaluation within this cohort for progression of dysglycaemic states is warranted.

References

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[4] https://qrisk.org/three/ (Last accessed: 19/10/2018)