SIGNS OF CARDIOVASCULAR DISEASE IN A RURAL AFRICAN POPULATION; DOES HIV PLAY A ROLE?

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BACKGROUND

HIV is associated with an increased risk of cardiovascular disease (CVD) in high income countries. It is not clear if this is the case for low- and middle income countries, while 70% of people with HIV reside in Sub-Saharan Africa (SSA).

We therefore investigated, **whether HIV is associated with abnormal pulse wave velocity (PWV)**, an indication of arterial stiffness and a well-known surrogate marker for CVD.[1]

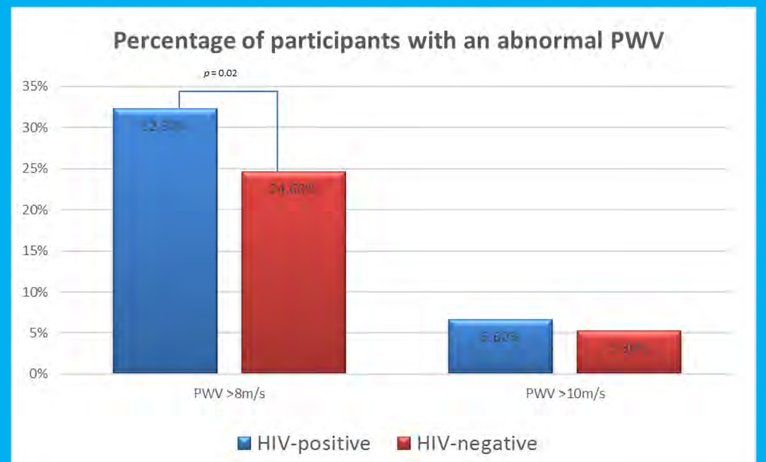
PARTICIPANTS AND METHODS

Baseline data of the **Ndlovu Cohort Study** were used. This is a prospective study in Limpopo, South Africa, with 1040 HIV-negative and 887 HIV-positive participants (54% females). Data were collected on hypertension, body mass index, dyslipidemia, diabetes and smoking. PWV was measured using a SphigmoCor device. A speed of >8m/s was defined as abnormal.[2] Logistic regression was used to investigate if HIV was associated with abnormal arterial stiffness

RESEARCH AIM

- **To investigate the prevalence of abnormal arterial stiffness in a rural African setting**
- **To investigate if HIV is associated with abnormal arterial stiffness**

RESULTS



HIV was independently associated with **abnormal arterial stiffness,** adjusted for age, gender, hypertension, BMI, diabetes mellitus and dyslipidemia:
OR 1.64, 95% CI 1.13-2.39.





Ndlovu research site

CVD risk characteristics	All	HIV-	HIV+	
	n = 853	n = 488	n = 365	p
Men	412 (48.3%)	298 (61.1%)	114 (31.2%)	<0.05
Age (years)	38.6 (12.6)	36.3 (13.5)	41.8 (10.5)	<0.05
Smoking	247 (28.6%)	174 (35.7%)	73 (20.0%)	<0.05[1]
Hypertension (n=850)	277 (32.6%)	173 (35.5%)	104 (28.5%)	<0.05[1]
Diabetes Mellitus (n=850)	40 (4.7%)	26 (5.3%)	14 (3.9%)	<0.05[1]
Dyslipidemia (n=842)	324 (38.5%)	186 (38.9%)	138 (37.8%)	<0.05[1]
BMI >25 kg/m2 (n=850)	291 (34.2%)	165 (33.9%)	126 (34.7%)	<0.05[1,#]

BMI, body mass index. Data in n (%) or mean (SD). [1]Comparisons were adjusted for gender and age. [#] HIV-infected participants have a lower BMI after adjusting for gender and age.

Conclusion

1. There is a lower burden of CVD risk factors in HIV-positive participants
2. There is a higher prevalence of abnormal arterial stiffness in HIV infection
3. HIV is independently related to abnormal arterial stiffness.

Discussion

Research is needed to identify HIV related factors that contribute to arterial stiffness. Awaiting these results emphasis should be on detection and management of well known CVD risk factors.

Literature

1. Van Bortel LM, Laurent S, Boutouyrie P, et al. Expert consensus document on the measurement of aortic stiffness in daily practice using carotid-femoral pulse wave velocity. J Hypertens. 2012 Mar;30(3):445-8.
2. Shiburi CP, Staessen JA, Maseko M, et al. Reference values for SphygmoCor measurements in South Africans of African ancestry. Am J Hypertens. 2006 Jan;19(1):40-6.

NDLOVU RESEARCH CONSORTIUM

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