Abstract: **P3417**

Comparison of cardiometabolic profile and left ventricular systolic dysfunction amongst outpatients in a low-income Sub-Saharan African versus high-income European population; the MTIMA I study.

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Background: Most of the information on modifiable risk factors linked to cardiac dysfunction comes from high income countries and/or hospitalized patients. We sought to evaluate the challenge of non-communicable diseases (NCDs) in the community setting in Malawi, and to compare the cardiometabolic profile of these patients with age, sex and diabetes matched European participants.

Methods: MTIMA I is a prospective, observational, cohort study of community dwelling patients attending a NCD clinic in Malawi together with age, sex and diabetes matched European participants. All consenting patients were evaluated for clinical history, blood pressure, heart rate, body mass index (BMI), fasting glucose, left ventricular ejection fraction and medications.

Results. Amongst 251 sub-Saharan African patients and 502 age, sex and diabetes matched European patients, the average age was 61.8 ± 10.6 years, 31% were male and 53% had diabetes and the majority had hypertension (80.0% and 70.7% in the African and European cohorts respectively, p=NS). The African population had poorer pressure control (147/90 ± 21/13 mmHg vs 137/82 ± 19/11 mmHg, p<0.0001) and higher heart rates (80.73 ± 17.0 bpm vs 72.7 ± 12.5 bpm, p<0.0001) than the European cohort. Use of antihypertensive agents per patient was lower in the African population (0.96 ± 0.05 vs 1.22 ± 0.05, p<0.001) and there was lower usage of renin-angiotensin-aldosterone-system modifying therapies. Reported smoking rates were lower in the African cohort (3% vs 16%, p<0.0001). Only 78 of the African cohort had lipids evaluated compared with all the European cohort and in this subset, while total cholesterol was lower (4.4 ± 1.2, vs. 4.6 ± 0.5 mmol/L, p<0.01), it was due to lower HDL (0.99 ± 0.5 vs 1.3 ± 0.2 mmol/L, p<0.001) as LDL cholesterol was similar (2.6 ± 1.0, vs 2.5 ± 0.5 mmol/L, p=ns). Statin usage was lower in the African cohort (1.6% vs 61.5%, p<0.0001). Surprisingly, the average body mass index did not differ between the populations (28.9 ± 0.3 vs 29.2 ± 1.5 kg/m², p=NS) and there were similar proportions of obesity (31.1% vs 33.7%). Plasma glucose was higher in the African population (10.3 ± 0.4 vs. 7.4 ± 0.1 mmol/L, p<0.0001) despite similar usage of antidiabetic therapies. Average ejection fraction was significantly lower in the African cohort (49.8 ± 8.6% vs 66.5 ± 3.5%, p<0.0001). Left ventricular systolic dysfunction (<40%) was significantly more prevalent in the African cohort (21% vs 0.4%, p<0.0001).

Conclusions: The profile of cardiovascular risk factors, medications and cardiac dysfunction is different in community dwelling African and European patients with chronic cardiovascular disease. One in 5 African patients in our study has undiagnosed left ventricular systolic dysfunction reflecting the need for increased focus on non-communicable diseases and cardiovascular prevention. Further work on the pathophysiology of the high rate of LVSD noted and prevention strategies are required.