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EDITORIAL

The burden of heart failure in Africa

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This editorial refers to 'A predominance of hypertensive heart failure in the Abuja Heart Study cohort of urban Nigerians: a prospective clinical registry of 1515 *de novo* cases', by D. Ojji *et al.* doi.10.1093/eurjhf/hft061

Over the last few years, the focus of the international health community has shifted from communicable diseases as the main cause of morbidity and mortality in Africa (and indeed in the world in general) to non-communicable diseases.[1,2] Relatively scant recent research suggests that in Africa cardiovascular (CV) diseases are a leading cause of morbidity and mortality, where up to 25% of admissions to hospitals are for CV disease, including hypertension (HTN).[3–14] Heart failure (HF) is the most common CV disorder and the main driver of CV adverse morbidity and mortality.[3–15]

In this respect, the study by Ojji *et al.* in this month's issue of the journal[16] is a welcomed addition. In this hospital-based study, the authors report on the current spectrum of (CV) diseases in Abuja—the new and modern capital of the Federal Republic of Nigeria. The data from Abuja were compared with the findings in Soweto, a predominantly Black community in South Africa. The findings suggest that CV diseases in Abuja, Nigeria are mainly non-ischaemic in origin and occur mainly in a younger and productive age group. Hypertension was found to be the most common cause, followed by dilated cardiomyopathies and rheumatic heart disease. The authors noted some subtle differences in the heart disease pattern in Abuja and Soweto. While there are higher rates of HTN and hypertensive HF in Abuja, ischaemic heart disease and right HF were more common in the Soweto study. As noted by the authors, this may be related to a higher burden of CAD and lung disease risk factors such as cigarette smoking, obesity, dyslipidaemia, and diabetes in Soweto compared with Abuja. Furthermore, peripartum cardiomyopathy is not as common a cause of CV disease and HF as expected.

Given this relative lack of published data, putting the results of Ojji *et al.*[16] into perspective is difficult. However, previous studies have found similar trends in different African countries and communities.[3–15] In most studies, HTN is followed by other disease entities that are less common outside of Africa, such as idiopathic dilated cardiomyopathy and rheumatic heart diseases. The Heart of Soweto registry[8,9] from the Soweto township in South Africa, which is also described in the manuscript itself, found similar, although not identical trends (see above). In a registry of 2908 patients presenting for CV diseases to a clinic in Mzuzu central hospital in Malawi[11] during a 5-year period, the most common causes of CV morbidity were rheumatic (34%), HTN (24%), cardiomyopathies (most commonly idiopathic dilated; 19%), and pericardial disease (14%). Atherosclerosis represented only 1–4% of cases. These trends are observed everywhere in Africa—in published and unpublished data, such as those depicted in a poster in the waiting area of a county hospital in Tzaneen; the Northern Province of South Africa (*Figure 1*). Indeed, similar results were published in studies from Nigeria[3–7] summarized in detail in the review by Ogah *et al.*[4] These studies show that the prevalence of HTN in the general Nigerian population ranges from 8% to 46.4%. More importantly, it seems that the prevalence of HTN is increasing[4]—from 8.6% reported in the only population-based study during the period from 1970 to 1979 to 22.55% during the period 2000–2011. HTN-related complications such as stroke, hypertensive heart disease (including hypertensive HF), and chronic kidney disease is common and often severe in hypertensive Nigerians. Late presentation is also common. Awareness, treatment, and control of HTN are low, as in many developing countries of the world.

Regarding admissions for HF, in a smaller study from the Yaoundé general hospital in Cameroon,[6] the main causes of HF admissions were HTN (54%), cardiomyopathies (26%), and valvular heart diseases (24%). Ischaemic heart disease was the fifth most common aetiology (2.4%). In a registry of 1000 patients admitted for HF and followed prospectively by Damasceno *et al.*,[15] the most common causes of HF were HTN (45%) and rheumatic heart disease (14%), while ischaemic heart disease (8%) was not a common cause for HF.

The study by Ojji *et al.*,[16] besides being one of the largest registries of CV diseases and HF in Africa, emphasizes two additional important aspects of CV diseases and HF and their treatment. First, the age of the patients affected is younger than in other world regions. Damasceno *et al.*,[15] Stewart *et al.*,[8] and Sliwa *et al.*[9] have shown that CV diseases and HF occur in Africa at a younger age than outside Africa.[18,19] In the series from Malawi, Soliman *et al.* found that the average age of patients presenting with CV diseases is as low as 40 years.[11] Other studies describing CV admissions in Nigeria found the age of admission to be 50–55 years.[3–7,10] In the study of Ojji *et al.*[16] the

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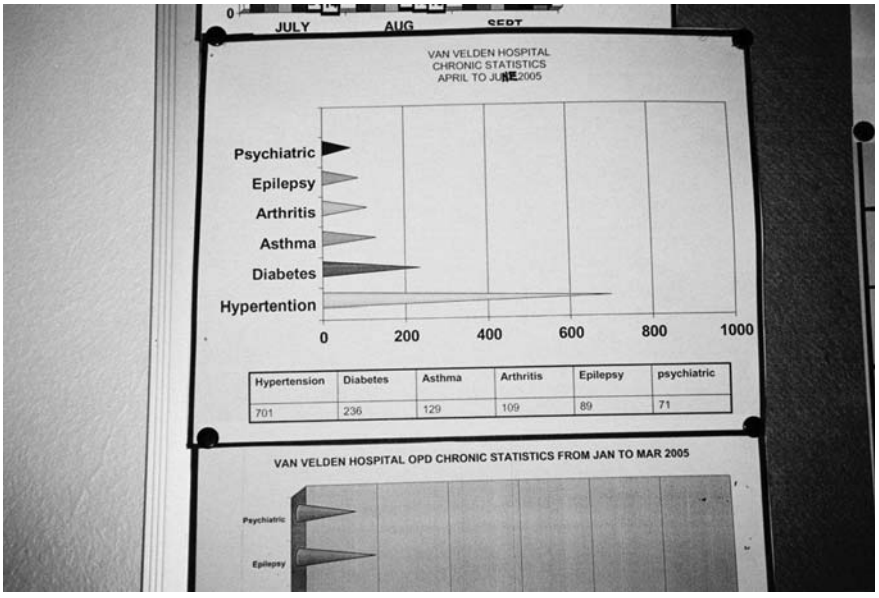

Figure 1 Prevalence of chronic morbidities among patients admitted to the county hospital in Tzaneen, Norther Province, South Africa between April and July 2005. Author unknown.

average age at admission for CV diseases was 49 years. This consistent finding is of tremendous importance since CV diseases and HF inflict Africans during the most productive years of their lives. This is in striking contrast to HF registries outside Africa where such admissions occur later in life, typically at ages $>$ 60–70 years.[18,19] Despite the almost two decade age difference, admissions for HF are associated with high morbidity and mortality, similar to those described outside Africa,[12,17] hence significantly limiting employment, parenting, and the ability of patients to be active members of the community. Indeed, in a commentary underlining the importance of non-communicable diseases, Rosenbaum and Lamas[20] suggest that 'Since these diseases affect people in the prime of their working lives, the World Economic Forum predicts that their overall cost will reach $47 trillion by 2030'.

Secondly, to improve CV outcomes, efforts should be made in the area of public health education as well as health promotion. The importance of such an effort is underlined by projections suggesting that by 2025 there will be an 89% increase in HTN in Africa, compared with 24% in high income countries.[21] In this regard, the paucity of resources to treat this growing wave of HF and CV morbidity and mortality is concerning. Ojji *et al.*[16] state that in the largest hospital in a city of 1 million residents there are only two trained cardiologists to attend to the patients. The Malawian registry referred to above[11] was performed in a CV clinic in Mzuzu that according to the authors was 'the only cardiac clinic run by a cardiologist in Malawi from 2001 through 2005'. We have recently initiated a study of the combination of hydralazine and nitrates in patients with HF in sub-Saharan Africa (BAHEFT- NCT01822808) and surveyed the sites participating in the study. The number of certified cardiologists per country is 2–90 and the number of trained cardiologists per resident ranges from 1/1 000 000 to 1/15 000 000 as compared with 1/28 000 in Germany and 1/12 500 in the USA.

In conclusion, we would like to thank Ojji and his co-authors for this useful contribution to CV research in Africa.[16] This timely publication adds valuable knowledge on the causes and characteristics of CV diseases in general and HF in particular in Nigeria, showing that CV and specifically HF morbidity in Africa has causes different from those outside of Africa—led by HTN, cardiomyopathies, and rheumatic heart disease. Further, the study draws our attention to other important issues that should be addressed urgently. CV diseases and HF affect African patients in the prime of their life and hence have more profound consequences than outside Africa. No less importantly, despite this, research into HF in Africa is scarce mostly due to limited resources, and its therapy is limited by the lack of both trained medical personnel and other vital resources. This alarming situation requires urgent attention.

Conflict of interest: none declared.

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