Editorial

Focus on non-communicable diseases: an important agenda for the African continent

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Abstract: In Africa together with risk factors for cardiovascular diseases such as systemic hypertension, diabetes, tobacco smoking, alcohol consumption and overweight, there is an important role of poverty-related conditions in determining the burden of cardiovascular diseases. The management of common diseases such as untreated congenital heart disease, rheumatic heart valve disease and cardiomyopathies, highly prevalent in Sub-Saharan Africa, imposes an unsustainable burden to the health systems in this continent, and may hamper the efforts towards Africa's alignment with the Global Agenda for non-communicable diseases (NCDs). Thus to prevent death and disability by cardiovascular disease in Africa specific approaches need to be designed focusing not only on the global risk factors addressed by the United Nations Declaration, but also on the prevention and control of infections and poverty-related diseases.

Keywords: Non-communicable diseases (NCDs); Africa; risk factors

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In Africa, like in other parts of the world, cardiovascular diseases are responsible for a considerable proportion of the burden of non-communicable diseases (NCDs). Although risk factors such as systemic hypertension, diabetes, tobacco smoking, alcohol consumption and overweight are present, there is an important role of poverty-related conditions (such as rheumatic heart valve disease) and myocardial diseases of unclear aetiology [namely peripartum cardiomyopathy (PPCM) and Endomyocardial Fibrosis] (1).

The High Level Meeting of the 66th Session of the United Nations General Assembly held in September 2011 issued a Political Declaration that focused the attention of world leaders and the global health community on the prevention and control of NCDs. Following this declaration all African countries have committed themselves to the development of integrated national action plans for control of these chronic conditions.

However, despite these good intentions, the persistence of high prevalence of infectious diseases, the lack of qualified human resources to diagnose and manage common chronic diseases, and the economic limitations of the health systems in many countries have hampered the implementation of strategy for control of NCDs in the continent. The ratio of health professionals to inhabitants in Africa is among the lowest in the world and several countries rely on external assistance to acquire resources for their health system (2).

This issue includes an article by Tantchou Tchoumi and Butera (3), reporting on the profile of cardiac disease in Cameroon and its impact on health care services. They studied a population of 8,389 adults and 706 children, and found hypertension to be the most frequent disease in adult patients. However, post rheumatic valvulopathies were the main cause of heart failure in teenagers and young adults, corresponding to 35% of heart failure cases in all age groups. Finally, cardiomyopathies were responsible for 32% of the cases of cardiac failure. Surgery for treatment of rheumatic valve disease is the main indication for surgery in this rural cardiac centre.

Regarding rheumatic heart disease (RHD), similar data has been reported from other parts of the continent in studies that included children and young adults. Ogeng'o *et al*. (4) reported on congestive heart failure in the

Kenyan paediatric population, showing that it occurred mainly before five years of age, and that the main causes were infection (22.8%), anaemia (17.1%), RHD (14.6%), congenital heart disease (13.3%), cardiomyopathy (7.6%), tuberculosis and human immunodeficiency virus (6.9% each). This pattern differs from that found in developed countries, where congenital heart disease and cardiomyopathy predominate in this age group. Studies from Nigeria and Cameroon also showed that rheumatic heart disease is the commonest echocardiographic abnormality found in adolescents and young adults with cardiovascular disease in hospital series (5,6), while data from Malawi showed that rheumatic heart disease was almost as common as congenital heart disease (7).

The high occurrence of RHD in Sub-Saharan Africa reflects the inability of most countries to offer adequate primary prevention for Group A streptococcal infections in susceptible individuals as well as to detect and adequately manage patients with Rheumatic Fever (RF). The exact burden of RF/RHD is unknown because these conditions are not included in the current surveillance systems. However, the prevalence of RHD in schoolchildren reaches 30/1,000 in Mozambique (8) and, due to lack of access to adequate management, many patients have serious complications such as chronic heart failure, arrhythmia, thromboembolism and infectious endocarditis.

Cardiomyopathies in Sub-Saharan Africa include not only those usually seen in the developed world, but also specific forms such as PPCM, Endomyocardial Fibrosis and sub-mitral annular aneurysms. Additionally, several forms of secondary myocardial disease are frequent namely cardiomyopathies related to Human Immunodeficiency Virus infection, nutritional deficiencies and cardiomyopathy related to sickle-cell anemia (9). These conditions constitute the greatest challenge of all the cardiovascular diseases in this continent, due to the difficulties in diagnosing and managing them, related to the lack of access to specialized investigations or effective interventions in most endemic areas.

The incidence of PPCM varies from 1:1,000 deliveries in South Africa to 1:500 deliveries in Nigeria (10). The course and outcome of this cardiomyopathy are largely unpredictable, with maternal mortality being between 9% and 50%. While about half patients with PPCM recover, 25% develop dilated cardiomyopathy and the remaining evolve to death within three months, usually due to heart failure, arrhythmias or thromboembolism. On the other hand, Endomyocardial Fibrosis affects mainly children and adolescents, and is endemic in certain areas of Africa (11). Despite being associated with high morbidity and mortality, it has received little attention from the scientific community as a whole, representing the clearest example of a neglected tropical cardiomyopathy. Medical therapy is largely ineffective; surgery is challenging and the postoperative mortality remains high.

The cardiovascular diseases discussed here have high morbidity and mortality, hence the need for basic and clinical research targeting these conditions. While the role of African cardiologists in gathering and disseminating local data is important, continental organizations such as Pan-African Society of Cardiology (PASCAR) should aim for networking, mobilisation of resources and establishing leadership in care provision, research and training.

The specific pattern of cardiovascular diseases and the lack of adequate measures for disease prevention and control result in frequent need for open-heart surgery and management of complications of cardiomyopathies in young people, resulting in a high and unsustainable burden to the health systems in this continent. Several strategies and innovative ways of providing cardiovascular interventional and surgical care have been used in African countries, going from agreements to send patients overseas to programmes for the creation of local services to provide comprehensive care (12). The article by Tantchou Tchoumi and Butera (3) reports on results of one of such initiatives in Cameroon.

Recognizing that RHD is a priority for Africa the PASCAR defined a strategy to control RF and RHD in Africa (13). This strategy aims at raising the awareness of the public and health care workers with regard to RF and RHD; improving the quality of information available on the incidence, prevalence and burden of RF/RHD through epidemiological surveillance; working together as advocates to change public policy for the improvement of health care facilities needed to treat and prevent the disease; and working towards the establishment of national primary and secondary prevention programmes for RF and RHD. The programme has been co-ordinated throughout Africa by the PASCAR in collaboration with the World Heart Federation and the World Health Organization.

Specific approaches may be necessary in Africa to reach the objectives of the global agenda on NCDs. These strategies should focus not only on the diseases and risk factors indicated in the UN Declaration, but also address infections as the fifth risk factor (14) and target conditions such as RHD and cardiomyopathies. Only such an approach will substantially prevent death and disability by

cardiovascular disease in young people from Africa.

Efforts of the global community are expected to contribute to make medications for cardiovascular and other chronic diseases available in the kits of essential drugs in Africa. However, it is the role of African cardiovascular researchers to provide evidence on the epidemiological profile of NCDs in the continent, as well as guidance on strategies to face the issue of shortage of specialized human resources.

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