Spectrum of Cardiovascular Diseases in Ethiopia: It's Time for Health Policy Change

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Introduction

Non-communicable diseases (NCDs), including cardiovascular diseases (CVDs), are leading causes of death globally. CVDs accounted for 46% of all NCD deaths world-wide in 2012, and are rapidly increasing in low-middle income countries (WHO, 2014). The vast majority of heart failure causes in sub-Saharan Africa are due to non-ischemic causes; with rheumatic heart disease (RHD), hypertensive heart disease (HHD), and cardiomyopathy accounting for over 75% of cases.

Epidemiological data on CVD disorders are generally scarce in low-middle income countries, including Ethiopia. The Ethiopian government developed a national NCD action plan and is conducting a NCD risk factor survey to assess baseline risk factors. This initiative aims to achieve a 25 % reduction in the NCD related mortality by 2025, a goal set by the Global NCD Action Plan.

Objective

The primary objective was to supplement community-based surveys by describing the current situation of CVDs in main referral hospitals of the country.

Secondary objective

- Describe the socio-demographic and clinical characteristics of patients with CVD
- Better understand the types of treatment or treatment gaps for cardiac patients

Methodology

A prospective cross-sectional, descriptive analysis was conducted using clinical and sociodemographic data from pediatric and adult cardiac patients seen at six major hospitals in Ethiopia from January 2015 to June 2015.

Results

A total 6275 patients were included in the study. The majority were female (58.5%), urban residents (60.9%), with a mean age of 34.7 years (range of 0.6 years to 95 years). Of the study participants, 31.1% were younger than 18 years of age. Valvular heart disease was the primary diagnosis in 40.5% of the cases, with rheumatic heart disease accounting for 86% of the valvular diagnosis. The next common diagnoses were: congenital heart disease (17.8%), hypertensive heart disease (13.6%), ischemic heart disease (9.6%), cardiomyopathy (8.0%) and pulmonary hypertension (4.1%). The majority of patients (96.3%) with congenital and severe valvular heart disease did not receive surgical or percutaneous interventions due to the lack of available facilities and trained personnel.

Table 1. Sociodemographic Characteristics the Study Population

	Total (N= 6275)	Percent
Sex		
Female	3671	58.5
Male	2604	41.5
Age		
Mean age (in years) (SD)	34.7 (23.0)	
<5	648	10.3
5-12.9	834	13.3
13-22.9	526	8.4
23-32.9	843	13.4
33-42.9	718	11.4
43-52.9	649	10.3
53-62.9	819	13.1
63-7-42.9	742	11.8
>75	496	7.9
Age Category		
Adult(>18yr)	4356	68.9
Pediatric (<18yr)	1963	31.1
Urban vs rural		
Urban	3821	60.9
Rural	2454	39.1
Study site		
TASH	3042	48.5
Mekele	995	15.9
Gondar	938	14.9
Jimma	670	10.7
St Paul	334	5.3
Hawassa	296	4.7

TASH= Tikur Anbessa Specialized Hospital

Table 2. Types of Cardiovascular Diagnoses

Diagnostic Group	Frequency	Percent	Mean Age
VHD	2541	40.5	31.3
CHD	1115	17.8	9.0
HHD	854	13.6	52.3
IHD	600	9.6	53.9
CMP	505	8	43.2
Pulmonary HTN	255	4.1	41.8
Miscellaneous	212	3.4	46.2
Arrhythmia	132	2.1	52.1
Pericardial Disease	61	1	34.3
Total	6275	100	34.7

VHD = valvular heart disease; CHD = congenital heart disease; HHD= hypertensive heart disease; IHD= ischemic heart disease; CMP= cardiomyopathy; HTN = hypertension

Table 3. Characteristics of those with Valvular Heart Disease

		Frequency	Percent
Type	RHD	2184	86.0
	Non RHD	357	13.5
	Prosthetic	14	0.5
	Total	2541	100
Severity	Mild		16.2
	Moderate		18.5
	Severe		65.3
Gender	Female	1603	63.1
	Male	938	36.9
Mean age (in years)	31.3		

RHD = rheumatic heart disease

Table 4. Types of Congenital Heart Diseases in Pediatric Patients

Type	Frequency	Percent
VSD	393	34.9
ASD	239	21.3
PDA	201	18.1
TOF	80	7.2
AV canal defect	47	4.2
Con PS	43	3.8
CoA	25	2.2
TGA	23	2.1
Other	69	6.1
Total	1119	100

VSD= ventricle septal defect; ASD= atrial septal defect; PDA= patent ductus arteriosis; TOF= tetralogy of Fallot; Con PS= pulmonary stenosis; CoA= coarctation of the aorta; TGA= transposition of the great arteries

Discussion

Findings support the limited body of research to date that confirms that RHD remains the leading CVD diagnosis in Ethiopia and that the proportion of HHD and IHD are increasing.

A large number of diagnoses were made clinically. Tikur Anbessa hospital has the largest number of patients due to the referral pattern of patients to the hospital for diagnosis and possible surgical treatment.

This report is different from previous reports because it was the first prospective multi-site study including both adult and pediatric patients.

Conclusion

Cardiac valvular heart disease remains the leading cardiovascular diagnosis in Ethiopia. Unfortunately, nearly all of those diagnosed are not receiving treatment for their disease due to a combination of limited healthcare resources, access and lack of trained personnel. Governmental and health care agencies must prioritize healthcare spending to improve the prevention and treatment of these highly treatable conditions.

Acknowledgements

The study was funded by Minneapolis Heart Institute Foundation and the Friends of the Children's Heart Fund of Ethiopia Minneapolis, MN USA. Special thanks to: Bekele Alemayehu[1], Endale Tefera[2], Etsgenet Gedlu,[2] Henock Benti[3] ,Hagazi Tesfaye[4], Wandimu Daniel[5] ,Abrham Haileamlak[5], Esayas Kebede [6], Desalew Mekonnen[7], Kindie Wubeshet[8] . [1]Department of Internal Medicine, School of Medicine, College of Health Sciences, Addis Ababa University, [2] Department of Pediatrics, School of Medicine, College of Health Sciences, Addis Ababa University, [3] Department of Internal Medicine, St Paul Millennium Medical School, [4] Department of Internal Medicine, School of Medicine, College of Health Sciences, Mekele University, [5] Department of Pediatrics, School of Medicine, College of Health Sciences, Jimma University, [6] Department of Internal Medicine, School of Medicine, College of Health Sciences, Jimma University, [7]Department of Internal Medicine, School of Medicine, College of Health Sciences, Gondar University, [8] Department of Internal Medicine, School of Medicine, College of Health Sciences, Hawassa University.