

Clinical Practice Guidelines for detection and management of Hypertension in Africa: Different Levels of Success and Diverse Needs for Adaptation and Development

Authors

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Abstract

Raised blood pressure is the single commonest risk factor for stroke, heart and renal disease within the African region. Evidence based clinical practice guidelines for raised blood pressure will significantly reduce the burden attributed to raised blood pressure, however guidelines picture for Africa is unclear. We found only 24.2% of countries in Africa having clinical practice guidelines for detection and management of raised blood pressure. There is need to use existing evidence to address the diverse needs within the region.

Background

Hypertension is one of the leading cause of death and disability globally. In Africa, it is the major single risk factor for cardiovascular disease, stroke, and chronic kidney disease. In 2008 the prevalence of raised blood pressure was nearly four times higher than the 2005 estimate of the World Health Organisation regional office for Africa (WHO-AFRO), and it is projected to be 125.5 million by 2025. There is proven evidence that an investment in prevention and control of raised BP is cost-effective if targeted to persons at high risk and high income countries (HIC) have made significant progress in prevention, diagnosis and treatment (Moser 2013). Contrariwise, most low and middle income countries (LMIC) still lag behind significantly. The rising prevalence of the disease in the Africa region is still paralleled with poor awareness, low treatment and control rates. In high income countries there are laws controlling smoking and alcohol consumption, exercise promotion, advanced tests for predisposing factors and well established and rigorously developed evidence based clinical practice guidelines. These contribute in mitigating the impact of raised blood pressure in these communities.

Clinical practice guidelines (CPGs) are statements that include recommendations intended to optimize patient care, these CPGs are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options (Institute of Medicine 2011). A Cochrane on random reflections on the effectiveness and efficiency of health services had said that scientific technics could tell us how treatments could be efficiently applied in healthcare, CPGs is one of these technics (Cochrane 2013). Evidence based CPG can help improve the quality of healthcare services because these provide practitioners and health service users with synthesized quality evidence that can help them with decision making. This is even more significant in LMICs where human resources are low and opportunities for CME are scarce. CPGs can therefore contribute significantly in reducing the burden of diseases within the African region.

The purpose of this paper was to: assess the existence, development and use of national guidelines for detection and management of hypertension in the Africa region regardless of their quality.

Methods

CPGs for hypertension were searched using a scientifically developed search strategy. We searched for (Country Name) AND (Hypertension OR HTN OR High Blood Pressure) AND (Clinical Practice Guidelines OR Treatment Guide). This search strategy was translated into French, Portuguese and Spanish and also searched thus. We searched websites of ministries of health, national medical associations, WHO, emailed authors and sent requests on Afronets. We concluded that there were CPGs for hypertension if we could have a copy of these CPGs. All cases where CPGs could not be delivered to us were excluded; all cases where guidelines delivered were guidelines for European or South American countries were also excluded. We used Google and Pubmed for the searches. We also hand searched ministries of health websites as well as WHO website for national guidelines. For countries that we could not find CPGs for hypertension we further searched for evidence of existence or the lack of evidence of existence and reported as such (Table 2). We did not assess the quality of CPGs.

A total of 62 countries (table 1) were included in the search that was conducted between May and July of 2015.

A search expert was used in the search while 3 authors independently followed up to get copies of CPGs, evaluated them for inclusion or exclusions and followed up with emails for further clarifications.

Authors came from the African Community of the Guidelines International Network (GIN Africa), Centre for Development of Best Practices for Health (CDBPS) and Pan African Society of Cardiology (PASCAR).

Results

A total of 14 CPGs complying with our criteria for 14 countries out of 62 (24.2%) were retrieved and included (Table 1). Figure 1 shows the map of existence of national guidelines for detection and management of blood pressure across Africa. Burundi, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Rwanda, South Africa, Sudan, Uganda, United Republic of Tanzania, Zambia, Algeria, Gabon, Democratic Republic of Congo, Comoros Islands, Seycheles were identified to have developed or adopted with or without adaptation CPGs. Angola, Equitorial Guinea, Mozambique were identified as countries with CPGs in works. The rest of countries (35 of 62, 56.5%) could not find any evidence for existence or non-existence of CPGs for raised blood pressure we classified these as non-existing Raised blood pressure CPGs. Among countries who adopted CPGs, 8 (12.9%) adopted WHO ISH guidelines without local adaptations and 2 (3.2%) adopted Spanish, Brazilian and Portuguese guidelines without local adaptation. 3 countries (4.8%) had CPGs for raised blood pressure under production.

Table 4 shows a comparison of the findings from the three authors (Okwen, Valluri and PASCAR (Table 4)). We observed Kappa= -0.294 (SE of kappa = 0.083 and 95% confidence interval: From -0.457 to -0.131). The strength of agreement is worse than what you expect to see by chance alone. Further emails to Valluri suggested the inclusion of STG and also we related the high sensitivity of the Valluri search to their strategy to their not necessitating receiving a copy of CPG.

Discussion

24.2% of countries within the African region have guiding documents on clinical management of raised blood pressure.

Healthcare system stakeholders may not have yet recognized the importance of using evidence based clinical practice guidelines for the management of raised blood pressure or may lack the capacity to develop and implement these guidelines. This is likely to explain for the low availability of guidelines within the region.

These results suggest that in most of Africa, management of raised blood pressure without coordinated evidence based guidance, an approach which can potentially lead to missed diagnoses and ineffective treatment.

Conclusion

The world health statistics of 2015 suggests a strong relation between poverty and hypertension. This is particularly so for countries emerging from poverty. Globally, raised blood pressure prevalence is highest within the African region (29% compared with global median of 24%) and worse off in low-income countries (reaching medians of 28%). This suggest a link between poverty and raised blood pressure. This can be attributed to challenges faced within the LMIC and the African region countries in prevention, diagnosis and treatment for raised blood pressure. Within these regions, there are fewer or no laws to prevent raised blood pressure, for example smoking and alcohol laws or exercise promotion or weight loss programs. Faced with limited resources, these countries are also unable to diagnose early raised blood pressure or risk factors especially genetic risks. In addition lack of resource to provide guidance for clinicians and health care users further complicates in a situation where opportunities for continuing medical education is lacking.

Our studies suggest some countries adopt CPGs without adaptation, this reflects in some countries using calcium channel blockers as first line treatment in blacks, while existing evidence from clinical trials suggest use of diuretics.

Our study did not assess the quality of the national clinical guidelines however; the quality of CPGs in the South African has been assessed in another study (Kredo 2012).

In this situation, it is important to support ministries of health in the development or adaptation of evidence based guidelines for raised blood pressure. There is also a need to highlight the cost-effectiveness of CPGs as well as explore what are the best approaches to ensure that clinicians and users use these guidelines.

Keywords

Hypertension, Raised blood pressure, HTN, High Blood Pressure, Africa, Clinical Practice Guidelines, Evidence Based Medicine, PASCAR, CDBPS, Guidelines International Network.

Scientific Roles

OPM, IM, NC, OP, GN, AD, DO, MB developed the concept and protocol for study; OPM and ED developed the search strategy; OPM, IM, NC, and ED searched for national guidelines; OPM, IM, NC, evaluated national guidelines for inclusion and exclusion; OP, GN, AD, DO, MB monitored and supervised the study.

Acknowledgements

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Declaration of Interest

The authors declare that there is no conflict of interest.

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Tables and figures

Figure 1: The Africa map of national guidelines for detection and management of blood pressure.

Percentage with Raised blood pressure CPGs	Countries
24.2 %	Burundi, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Rwanda, South Africa, Sudan, Uganda, United Republic of Tanzania, Zambia

Table 2: National Guidelines Table Evidence

CPGs	Percentage	Countries
Existing CPGs for Raised blood pressure	24.2%	Burundi, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Nigeria, Rwanda, South Africa, Sudan, Uganda, United Republic of Tanzania, Zambia
WHO ISH	12.9%	Algeria, Gabon, Democratic Republic of Congo, Comoros Islands, Seycheles.
Adoption without Adaptation	3.2%	Angola, Equitorial Guinea, Mozambique
CPGs in the Works	4.8%	Sierra Leone, Tunisia, Cameroon
Non-Existent or Unclear (No evidence for existence or non-existence)	56.5%	Benin, Botswana, Canary Islands, Cape Verde, Central African Republic, Chad, Côte d'Ivoire, Djibouti, Eritrea, Gambia, Guinea, Guinea-Bissau, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Republic of the Congo, Réunion, São Tomé and Príncipe, Senegal, Somalia, Swaziland, Togo, Western Sahara, Zimbabwe, Burkina Faso, Madagascar, South Sudan.

Table 3: Comparative Search

Country	PASCAR	Valluri	Okwen	Score
Angola	Yes	No	No	1
Benin	No	Yes	No	1
Botswana	Yes	Yes	No	2
Burundi	No	No	Yes	1
Cameroon	No	Yes	No	1
Cape Verde	No	Yes	No	1
Chad	No	Yes	No	1
Congo	No	Yes	No	1
Cote d'Ivoire	No	Yes	No	1
Democratic Republic of the Congo	No	Yes	No	1
Egypt	Yes	No	Yes	2
Ethiopia	No	Yes	Yes	2
Gabon	No	Yes	No	1
Gambia	No	Yes	No	1

Ghana	No	Yes	Yes	2
Kenya	Yes	Yes	Yes	3
Lesotho	No	Yes	Yes	2
Liberia	No	Yes	No	1
Libya	Yes	No	No	1
Madagascar	No	Yes	No	1
Malawi	No	Yes	Yes	2
Mauritius	Yes	Yes	Yes	3
Mozambique	Yes	Yes	No	2
Namibia	No	Yes	No	1
Nigeria	Yes	Yes	Yes	3
Rwanda	Yes	Yes	Yes	3
Senegal	No	Yes	No	1
Seychelles	Yes	Yes	No	2
Sierra Leone	No	Yes	No	1
South Africa	Yes	Yes	Yes	3
South Sudan	No	Yes	No	1
Sudan	Yes	Yes	Yes	3
Swaziland	No	Yes	No	1
Uganda	Yes	Yes	Yes	3
United Republic of Tanzania	Yes	Yes	Yes	3
Zambia	Yes	Yes	Yes	3
Zimbabwe	Yes	Yes	No	2
	16	33	15	

Table 4: Kappa Score for Inter-observer Agreement Okwen Versus Valluri

	A	B
A	15	48
B	33	29
Total	48	77

The calculator was updated in July 2014 so it doesn't try to compute the SE or CI when Kappa = 0.0.

This calculator was changed in April 2011 to use a better equation for computing the SE and confidence interval of Kappa. It now uses equations 18.16 to 18.20 from Fleiss, [Statistical Methods for Rates & Proportions \(3rd edition\)](#). It did not work between Aug. 1 and Sept 7, 2012.