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ANALYSIS OF HYPERTENSION AS A RISK FACTOR FOR ATRIAL FIBRILLATION AMONG LOCAL POPULATION OF PAKISTAN

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Abstract:
Introduction: Atrial fibrillation (AF) is a major clinical and public health problem in the United States and worldwide. It is estimated that up to 2% of the U.S. adult population suffers from AF.
Aims and objectives: The main objective of the study is to analyse the hypertension as a risk factor for atrial fibrillation among local population of Pakistan.
Material and methods: This cross sectional study was conducted in Sahiwal medical college during January 2019 to June 2019. The data was collected from 100 patients who visited the OPD of the hospital regularly. The data was collected through a questionnaire. The following parameters were recorded: Age, gender, and previous history of hypertension, diabetes, smoking, and dyslipidemia. Charts of patients who had no previous history of any of the primary risk factors were also reviewed.
Results: The data was collected from 100 patients. Among 50 cases, 36% were exercising and 64% were not exercising and among 100 controls 67% were exercising and 33% were not exercising. Hypertension is recognized as the most common risk factor of stroke in this study. Out of n = 50 cases, 39 cases (78%) were hypertensive, having p = 0. 000 and Odd ratio of 4.16 with relative risk of 2.7.
Conclusion: AF affects millions of people worldwide and, left untreated, increases the risk and severity of stroke, heart failure and death. Hypertension is the most important risk factor of AF.

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INTRODUCTION:

Atrial fibrillation (AF) is a major clinical and public health problem in the United States and worldwide. It is estimated that up to 2% of the U.S. adult population suffers from AF. Its prevalence is on the rise and expected to double over the next 25 years with the aging of populations in industrialized nations. Through its association with heart failure and stroke, AF exerts a profound negative impact on the quality and quantity of life of millions [1]. Hospitalizations and related treatment costs from AF have increased significantly, with more than $2.1 billion spent on AF care in the U.S. alone on an annual basis. Although antiarrhythmic drugs and ablative therapies reduce AF burden and improve symptoms, no cure exists [2]. This has led many to search for "upstream" or preventative therapies to delay the onset of AF. Our understanding of AF and its causes has improved markedly, with structural and electrical remodeling of the left atrium being increasingly recognized as a process that precedes and contributes to AF vulnerability [3].

Hypertension and atrial fibrillation (AF) are 2 important public health priorities. Hypertension is the most powerful predictor of mortality in high- and low-income countries. It progressed from rank No. 4 in year 1990 to rank No. 1 in year 2010 as a global risk factor for death, disability-adjusted life-years, and years of life lost. The prevalence of hypertension is growing, being currently around 20% to 50% in the adult population worldwide [4]. Although coronary heart disease and stroke mortality increase with usual blood pressure (BP) levels, specific cardiovascular events differ in their relation with BP. In a cohort of 1.25 million patients, the association between each 20-mm Hg increase in systolic BP and outcome was strongest for intracerebral hemorrhage, subarachnoid hemorrhage, stable angina and ischemic stroke, and weaker for abdominal aortic aneurism and transient ischemic attack [5].

Aims and objectives:

The main objective of the study is to analyse the hypertension as a risk factor for atrial fibrillation among local population of Pakistan.

MATERIAL AND METHODS:

This cross sectional study was conducted in Sahiwal medical college during January 2019 to June 2019. The data was collected from 100 patients who visited the OPD of the hospital regularly. The data was collected through a questionnaire. The following parameters were recorded: Age, gender, and previous history of hypertension, diabetes, smoking, and dyslipidemia. Charts of patients who had no previous history of any of the primary risk factors were also reviewed. All patients recruited to the study had a history of acute onset neurological deficit (either focal or global), which lasted more than 24 hours, and underwent brain CT at the time of admission to rule out hemorrhage. Hypertension was defined as blood pressure >140/95 mm Hg on 2 separate occasions, or the use of antihypertensive medication at any time before the onset of stroke.

Statistical analysis:

The data was collected and analysed using SPSS version 20.0. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 100 patients. Among 50 cases, 36% were exercising and 64% were not exercising and among 100 controls 67% were exercising and 33% were not exercising. Hypertension is recognized as the most common risk factor of stroke in this study. Out of n = 50 cases, 39 cases (78%) were hypertensive, having p = 0. 000 and Odd ratio of 4.16 with relative risk of 2.7.

Table 01: Risk factors of stroke

Variable	Cases	Controls	P-value	Odd ratio	Relative risk
Exercise	18 (36%)	67 (67%)	.000	3.60	2.32
No Exercise	32 (64%)	33 (33%)			
Smoker	24 (48%)	31 (31%)	.042	2.05	1.5
Nonsmokers	26 (52%)	69 (69%)			
Balanced diet	23 (46%)	47 (47%)	.908	1.04	
Fatty diet	27 (54%)	53 (53%)			

Diabetic	24 (48%)	27 (27%)	0.10	2.49	1.7
Non diabetic	26 (52%)	73 (73%)			
Hypertensive	39 (78%)	46 (46%)	.000	4.16	2.7
Non Hypertensive	11 (22%)	54 (54%)	.705	1.15	
Stress	16 (32%)	29 (29%)			

DISCUSSION:

As the population ages globally, atrial fibrillation (AF) is predicted to affect 6–12 million people in the USA by 2050 and 17.9 million in Europe by 2060. AF utilizes significant health resources globally, and constitutes a public health challenge with high comorbidity,[5] and increased mortality risk [6]. The reasons for the increase in the prevalence of AF remain elusive and are related to multiple factors including; enhanced detection, increased incidence, and greater survival after onset of AF [7]. The purpose of this review is to assess the evidence related with the increased overall prevalence of AF and to propose a global strategy focused on enhanced detection and multidisciplinary management of AF envisioned by the World Heart Federation [8].

AF is the most frequently encountered arrhythmia in clinically practice. Between 1990 and 2013, although the global prevalence rate of AF decreased slightly, the overall number of AF cases increased. AF is associated with an increase in morbidity, as measured by disability-adjusted life years (DALYs). Estimates of prevalence of AF, and DALYs associated with AF, are likely to underestimate true burden due to the high prevalence of asymptomatic AF. AF also leads to increased health care resource utilization and may have a significant impact on global health budgets [9]. Several long-term cohorts have clearly established that several clinical outcomes are increased in patients with AF. Among other clinical outcomes, AF is associated with increased risk of stroke and is found in one third of all ischemic strokes [10].

CONCLUSION:

AF affects millions of people worldwide and, left untreated, increases the risk and severity of stroke, heart failure and death. Hypertension is the most important risk factor of AF. The global aging of the population will determine an endemic that will result in significant burden on health care systems and physicians taking care of these populations. There exist significant gaps globally that put LMICs at higher risk of negative outcomes that merit a global approach that promotes conscious identification and management of modifiable risk factors as well as proper risk stratification and treatment.

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