

## RESEARCH ARTICLE

## INCIDENCE OF KIDNEY DISEASE ASSOCIATED WITH HYPERTENSION IN PATIENTS AGE **ABOVE 40 YEARS OLD**

Manal Abdulaziz Murad<sup>1</sup>, Fatima I. Albeladi<sup>2</sup>, Hoda Jehad Abousada<sup>3</sup>, Elham Salem Allhabi<sup>4</sup>, Turki Faissal Bugshan<sup>4</sup>, Saud Ghalib Almahdaly<sup>4</sup>, Mohammed Adel Alminee<sup>4</sup>, Wed Fahad Saleh Shamah<sup>5</sup>, Sarah Salem Almohammadi<sup>5</sup>, Maha Ali Almuhandis<sup>5</sup>, Gaida Mohammadamen Felemban<sup>5</sup> and Ahmed Saeed Banheem<sup>6</sup>

- 1. Assistant Professor and Consultant family medicine, Department of Family Medicine, faculty of medicine, King Abdulaziz University, KSA.
- 2. Associate Professor in Internal Medicine (Nephrology) Department of Nephrology, Faculty of medicine, King Abdulaziz University, Jeddah, Saudi Arabia.
- 3. Medicinae Baccalaureus Baccalaureus Chirurgiae, bn Sina National College, KSA (Postal Address: Jjeddah, Al-Thaghr neighbourhood, 22338.
- Medical Interns, Ibn Sina National College, KSA. 4.
- 5. Medical Interns, Batterjee Medical College, KSA.
- 6. Internal Medicine Resident Service, King Abdullah Medical Complex, KSA.

..... Manuscript Info Abstract Manuscript History Received: 14 October 2019 Final Accepted: 16 November 2019 Published: December 2019 Copy Right, IJAR, 2019,. All rights reserved. .....

## Introduction:-

The kidneys help filter wastes and extra fluids from blood, and they use a lot of blood vessels to do so. Over time, uncontrolled high blood pressure can cause arteries around the kidneys to narrow, weaken or harden. These damaged arteries are not able to deliver enough blood to the kidney tissue. the importance of this lies in the fact that when a problem occurs in the blood vessels in the kidneys, this affects the function of the kidneys, which also affects high blood pressure.

## **Rationale:**

This research important because the first thing the Hypertension is the worldwide problem in a lot of people especially increase incidence with increase the age, second thing the kidney disease more the disease associated with the HTN than the other disease .we should know the prevalence which is help to know the risk factors of kidney disease is there is relation between the hypertension or not? And this relationship is about how many percent.

## **Objectives:-**

## Literature review:

According to this study Cardiovascular risk factors among high-risk individuals attending the general practice at king Abdulaziz University hospital: a cross-section al study. (Ghamri et al., 2019)

The results was: We observed significantly greater prevalence of hypertension (p = 0.073), (Ghamri et al., 2019)

## **Corresponding Author:- Hoda Jehad Abousada**

Address: - Medicinae Baccalaureus Baccalaureus Chirurgiae, bn Sina National College, KSA (postal address: Jjeddah, Al-Thaghr neighbourhood. 22338.

Similarly, in our study Likewise, in our study, we focused on the most affected gender by kidney disease and hypertension.

## **Research Aim:**

To determine the prevalence of kidney disease associated with Hypertension in specific age above 40 age

## **Objectives:-**

- 1. To determine the prevalence of kidney disease.
- 2. To determine the age group most affected by kidney disease.
- 3. To determine the prevalence of kidney disease in which gender more common
- 4. The extent of association of kidney disease patients with other diseases
- 5. Is there a relationship between kidney disease patients and smoking?

## Methodology:-

## Study design:

This is an analytical cross-sectional study.

#### **Study Setting and period:**

This is an analytical cross-sectional study conducted in hospitals (in patient). Internal medicine ward and Cardiology ward, KSA from August 2019 till November 2019.

#### Study population and sampling:

#### Study participants:

Inclusion criteria; patients with any one of this: Kidney disease, Hypertension, DM and smokers. Exclusion criteria; patients with other medical illness.

## Sampling Method:-

Participants will be especially from hospitals (In patients) carried out by questionnaire.

#### Sampling size:

Sample size was calculated using OpenEpi for sample size calculation for cross sectional studies, hypothesizing the true answers Accordingly, 273 participants were gathered from the hospital patients. score of prevalence of who suffering from kidney disease 23.08%, prevalence of who suffering from hypertension 59.71%.

According to the prevalence study, 78.02% of participants males, 91.94% above 50-year-old, 94.51% non-smoker, 78.75% diabetic patients.

## Measurements:-

#### **Explanatory variables:**

1. Sociodemographic characteristics: gender, age, nationality.

2. Disease-related information: Kidney disease, hypertension, DM, smoking.

Outcome measures

# The outcome measure is by counting the ratio of the number of patients have kidney disease this will be measured using:

By determining the extent of the disease in addition to the associated with other important chronic disease.

#### **Prevalence study:**

will be carried to test the questionnaire if easily understood and the response of the participants. Data from the crosssectional study will be used to calculate the sample size.

#### Data Management and Analysis plan:

Data will be entered and analyzed using SPSS version 17.0 Descriptive statistics will be performed and categorical data will be displayed as frequencies and percentages while measures of central tendencies and measures and dispersion will be used to summarize continuous variables. Univariate and multivariate analysis will be performed to

investigate association between exposure factors gender, age, nationality, risk factors and associated disease. statistical significance is set at a P value of 0.05 or less.

### Statistical analysis:

Data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 17. Descriptive statistics were displayed as frequencies and percentages for categorical variables. Measures of central tendencies (the median), and measures and dispersion (minimum – maximum) were used to summarize continuous variables, as the continuous variables were not normally distributed when tested by Shapiro-Wilk test. Univariate analysis was performed to investigate the association between the exposure factors (gender, age, nationality and associated disease), with the outcome on the one hand, this was performed using Chi-squared test and Mann-Whitney test. Multivariate analysis to investigate factors independently was performed using binary logistic regression. P value was set at a significance level of < 0.05.

## **Results:-**

In this study, the aim was to determine the prevalence of kidney disease associated with hypertension in specific age above 40 age, 273 patients' participants, were consecutively recruited from in patients' clinics, during a period from 23/8/2019 to 17/11/2019

Socio-demographic characteristics of the studied group,91.94% above age 50 year, 78.02% males, most of the participants were Saudis 93.04%. According to disease 76.92% don't suffer from kidney disease, 59.71% hypertinsive patients, 78.75 diabetic patients, 94.95% non-smoker.

Table 1:-				
Age Valid	Frequency	Percent	Valid Percent	Cumulative Percent
35- 40 years	2	.7	.7	.7
41- 50 years	20	7.3	7.3	8.1
> 50 years	251	91.9	91.9	100.0
Total	273	100.0	100.0	



Figure 1:-

#### Table 2:-

	Gender	Frequency	Percent	Valid Percent	<b>Cumulative Percent</b>
Valid	Male	213	78.0	78.0	78.0
	Female	60	22.0	22.0	100.0
	Total	273	100.0	100.0	



Figure 2:-

Table 3:	-				
	Nationality	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Saudi	254	93.0	93.0	93.0
	Palestinian	2	.7	.7	93.8
	Yemeni	2	.7	.7	94.5
	Egyptian	3	1.1	1.1	95.6
	Syrian	3	1.1	1.1	96.7
	Pakistani	1	.4	.4	97.1
	Filipino	4	1.5	1.5	98.5
	Sudanese	2	.7	.7	99.3
	Others	2	.7	.7	100.0
	Total	273	100.0	100.0	



Figure 3:-

Table 4:

Kidney					
		Frequency	Percent	Valid Percent	<b>Cumulative Percent</b>
Valid	Yes	63	23.1	23.1	23.1
	No	210	76.9	76.9	100.0



Figure 4:-

Table 5:-								
Hypertension								
		Frequency	Percent	Valid Percent	Cumulative Percent			
Valid	Yes	163	59.7	59.7	59.7			
	No	110	40.3	40.3	100.0			
	Total	273	100.0	100.0				



## Table 6:-

Diabetes								
		Frequency	Percent	Valid Percent	<b>Cumulative Percent</b>			
Valid	Yes	215	78.8	78.8	78.8			
	No	58	21.2	21.2	100.0			
	Total	273	100.0	100.0				





Table 7:-					
Smoker					
		Frequency	Percent	Valid Percent	<b>Cumulative Percent</b>
Valid	Yes	15	5.5	5.5	5.5
	No	258	94.5	94.5	100.0
	Total	273	100.0	100.0	



Figure 7:-

Correlations						
		Age	Gender	Nationality	Kidney	Hypertension
Age	Pearson Correlation	1	021-	.016	100-	.016
	Sig. (2-tailed)		.732	.792	.100	.789
	Ν	273	273	273	273	273
Gender	Pearson Correlation	021-	1	.115	.081	382-**
	Sig. (2-tailed)	.732		.057	.183	.000
	Ν	273	273	273	273	273

Nationality	Pearson Correlation	.016	.115	1	.054	191-***		
	Sig. (2-tailed)	.792	.057		.377	.002		
	Ν	273	273	273	273	273		
Kidney	Pearson Correlation	100-	.081	.054	1	046-		
	Sig. (2-tailed)	.100	.183	.377		.446		
	Ν	273	273	273	273	273		
Hypertension	Pearson Correlation	.016	382-**	191-**	046-	1		
	Sig. (2-tailed)	.789	.000	.002	.446			
	Ν	273	273	273	273	273		
Diabetes	Pearson Correlation	113-	124-*	040-	.136*	.158**		
	Sig. (2-tailed)	.061	.040	.508	.025	.009		
	Ν	273	273	273	273	273		
Smoker	Pearson Correlation	.088	.050	012-	056-	.198**		
	Sig. (2-tailed)	.148	.407	.844	.359	.001		
	Ν	273	273	273	273	273		
**. Correlation	**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).								

## **Discussion:-**

This study was based on a number of 273 participants, from this study as the number of males is 213 and females is 60, 63 of them have kidney disease, 163 of them having hypertension.

The current study showed statistically significant (P value is 0.01) and (P value is 0.05),

Through the questionnaire it was found that there is a strong relationship between suffering from diabetes and having hypertension.

Also, through the questionnaire it was found that there is a strong relationship between smoking and having hypertension, and smoking that in itself is a sufficient reason for the risk of heart disease.

Also, through the questionnaire it was found that there is a strong relationship between suffering from diabetes and having a kidney disease.

## **Conclusion:-**

In this study most of the respondents do not suffer from kidney disease despite their old age, the majority are over 50 years old, and this is positive.

Kidney disease more common in males than females, 59.71% hypertensive patients.

## **Recommendation:-**

we recommend setting up health education programs about the geriatric diseases specially kidney disease and hypertension, this health problem must be presented broadly and beneficially and, in a way, that everyone understands, as most deal with the kidney disease by ignoring and not being important, work should be done on health conferences and medical discussions on that.

## Acknowledgement :-

The authors would like to thank the participants for their great cooperation, Participants will be especially from in patients' hospitals selected and carried out by questionnaire.

We thank the data collectors who collected the data from the patients, they worked hard to collect data greatly, and a large sample number was collected for their great effort.

## Ethical considerations:

Administrative approval will be sought from the unit of biomedical ethics research committee Ethical approval will be sought from the ethical committee of the faculty of medicine, king abdulaziz university. An informed consent will be sought from the participants.

## Source of funding, Self-funded:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## **References:-**

- 1. Ghamri, R., Alzahrani, N., Alharthi, A., Gadah, H., Badoghaish, B. and Alzahrani, A. (2019). Cardiovascular risk factors among high-risk individuals attending the general practice at king Abdulaziz University hospital: a cross-sectional study. BMC Cardiovascular Disorders, [online] 19(1). Available at: https://www.ncbi.nlm.nih.gov/pubmed/31775642.
- Information, H., Disease, K., Disease, K., Center, T. and Health, N. (2018). Kidney Disease | NIDDK. [online] National Institute of Diabetes and Digestive and Kidney Diseases. Available at: https://www.niddk.nih.gov/health-information/kidney-disease [Accessed 1 Jul. 2018].
- 3. Information, H., Statistics, H., States, K., States, K., Center, T. and Health, N. (n.d.). Kidney Disease Statistics for the United States | NIDDK. [online] National Institute of Diabetes and Digestive and Kidney Diseases. Available at: https://www.niddk.nih.gov/health-information/health-statistics/kidney-disease.
- 4. Luyckx, V., Tonelli, M. and Stanifer, J. (n.d.). The global burden of kidney disease and the sustainable development goals. [online] WHO. Available at: https://www.who.int/bulletin/volumes/96/6/17-206441/en/.
- 5. En.wikipedia.org. (n.d.). Hypertension. [online] Available at: https://en.wikipedia.org/wiki/Hypertension.