RESEARCH ARTICLE

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

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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:

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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 cross-sectional 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% hypertensive patients, 78.75 diabetic patients, 94.95% non-smoker.

**Table 1:**

| Age Valid   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------|-----------|---------|---------------|--------------------|
| 35-40 years | 2         | 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 | Cumulative Percent |
|----------|-----------|---------|---------------|--------------------|
| Valid    |           |         |               |                    |
| Male     | 213       | 78.0    | 78.0          | 78.0               |
| Female   | 60        | 22.0    | 22.0          | 100.0              |
| Total    | 273       | 100.0   | 100.0         |                    |
Table 3:

| Nationality | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------|-----------|---------|---------------|--------------------|
| Valid       | Saudi     | 254     | 93.0          | 93.0               |
|             | Palestinian| 2       | .7            | .7                 |
|             | Yemeni    | 2       | .7            | .7                 |
|             | Egyptian  | 3       | 1.1           | 1.1                 |
|             | Syrian    | 3       | 1.1           | 1.1                 |
|             | Pakistani | 1       | .4            | .4                 |
|             | Filipino  | 4       | 1.5           | 1.5                 |
|             | Sudanese  | 2       | .7            | .7                 |
|             | Others    | 2       | .7            | 100.0               |
| Total       | 273       | 100.0   | 100.0         |                     |

Figure 3:

Table 4:

| Kidney | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------|-----------|---------|---------------|--------------------|
| Valid  | Yes       | 63      | 23.1          | 23.1               |
|        | No        | 210     | 76.9          | 100.0              |
Table 5:-

| Hypertension | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------|-----------|---------|---------------|--------------------|
| Valid         | Yes       | 163     | 59.7          | 59.7               |
|               | No        | 110     | 40.3          | 100.0              |
| Total         |           | 273     | 100.0         | 100.0              |

Table 6:-

| Diabetes | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------|-----------|---------|---------------|--------------------|
| Valid    | Yes       | 215     | 78.8          | 78.8               |
|          | No        | 58      | 21.2          | 100.0              |
| Total    |           | 273     | 100.0         | 100.0              |
Table 7:-

| Smoker | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------|-----------|---------|---------------|--------------------|
| Valid  | Yes       | 15      | 5.5           | 5.5                |
|        | No        | 258     | 94.5          | 100.0              |
| Total  |           | 273     | 100.0         | 100.0              |

Correlations

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

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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 abdulziz university. An informed consent will be sought from the participants.

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