



Frequency of Kidney Stone in Population of Peshawar Coming to Northwest General Hospital Peshawar for Computed Tomography Scan (KUB)

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Abstract

Objective: The aim of this analysis was to find the frequency of kidney stone in population of Peshawar coming to northwest general hospital.

Method: This was Cross sectional examination done in North west General Hospital and Research center Peshawar during March to June 2019. Data were collected on a self-administer Questionnaire and analyzed using SPSS version 22.

Results: From the study over a period (4 months) a total number of 100 CT scan were done for finding kidney stones. Of these 64 patients having kidney stones and 36 were having no kidney stones. Among 64 patients 25 (37.3%) were males patients and 39 (58.2%) were female patients which are involved in the study. The most patients having kidney stones are under age of 35 to 50 years of age. Patients with right kidney stones were 44 (65.7 %) and left kidney stones were 29 (43.3%).

Conclusion: The final results of this study at have proven that urolithiasis indicates urinary tract stone involved number of factor. Female genders are more likely to developed kidney stone as compared to male. Computed Tomography (CT) has been described because the "best imaging observe to verify the analysis of urinary stone," A situation so that it will arise in up to 12% of the population and continues to account for up to 50% of these patients.

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Keywords: Prevalance; Kidney stone; Computed tomography; Urolithiasis; Incidence; frequency; Nephrolithiasis.

Introduction

The formation of kidney stone involves a numbers of factors such as environmental and genetic elements. In many countries of the western, the occurrence and frequency of kidney stone formation were said to be 2% to 19%, with a high rate among men [1]. In Asia one of the most accepted urological diseases is kidney stone. The incidence and configuration of stones world-

wide vary, and there are many changes at the end time, with incidence starting from 7% to thirteen% in North the United States, in Europe its 5% to 9%, and in Asia 1% to 5% [2]. Changes amongst nations reveal some harmful factors, along with grow old, sex, nutritional behavior, fluid consumption, weather, career and training stage, fame, cultural or countrywide division, inherited and metabolic sicknesses [3].



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Kidney stone also called nephrolithiasis is common place problems worldwide, with a prevalence of 7% within the adults, and $\geq 30\%$ recurrence rate within 10 years. The occurrence of kidney stones is globally growing with an expected prevalence ranging up to 15% all through lifetime, about 7% of women and 13% [4] of men will broaden a kidney stone. Calcium oxalate is the most common place stone for the duration of the Europe.

In United States the kidney stone prevalence has multiplied since 1964-1972 term and seems to have balanced out for the mid 1980 [5]. Global increases in prevalence are in Germany, Spain, Italy. Scotland have slightly decreased from 3.83% in 1977 to 5.0% in 1987. In Asia approximately 1-19% of population suffered from kidney stone [6]. Demographically Asia can be separated into East Asia, primary Asia, West Asia, North Asia, Southeast Asia and South Asia Prevalence of kidney stone is in West Asia, South Asia and Southeast Asia 5_9% [7]. In India the population is 12% of them are estimated to have urinary stone and determine of which 50% can be come to be with renal failure. Kidney stone is most vital sickness in Pakistan the prevalence (100,000) within the north range from 2.4 in Chitral to 9.4% in Gilgit Across Pakistan the incidences ranges from 7.4% in north 28% in west to 200 consistent with 1,00,000 in the south [8]. Kidney stones are hard crystalline minerals formed in the kidneys or urinary tract. Kidney stones are a common cause of blood (hematuria) in the urine and are usually severe pain in the abdomen, side or groin. Kidney stones diagnosis calls for a complete health records assessment and a bodily examination. Different checks include: Examination of blood to check the level of calcium, phosphorus, uric acid, and electrolytes, test to determine Blood Urine Nitrogen (BUN) and creatinine test for kidney functioning, Urine analysis test for crystals, passed stones examination to rule out their types [9]. The following investigations can exclude obstruction:

- Abdominal x-ray.
- Intravenous pyelogram.
- Retrograde pyelogram.
- Ultrasound of the kidney (the preferred test).
- MRI scan of the abdomen and kidneys.
- CT scan (KUB) [10].

The contrast which is used in CT scan and the IVP can disturb kidney function. If the individual have normal kidney function contrast CT scan is not required. Computed Tomography (CT) is defined as "The first imaging test that confirms urinary stones. Without contrast CT (KUB) is best suited for imaging ureteral stones, with the majority (99%) radiopaque.

The objective of this study was to analyze the frequency of kidney stone disease in a population of Peshawar coming to NWGH for CT (KUB).

Material and methods

This cross sectional study was conducted at Northwest General Hospital and Research Center from March (2019) to June (2019). Our aim was to find out the frequency of kidney stone in people of Peshawar. kidney stone patients were selected by using convenient sampling technique. Sample size was calculated by Raosoft software. The calculated sample size was 100 with margin of error 9.4% and confidence interval 95%. Patients who are referred by physician for the complains of flank pain for CT

scan KUB of both genders (male and female) have include in the study. Patients who are unconsciousness, high creatinine level and kidney failure patients are excluded from the study.

Results

The study was done at Northwest General Hospital Peshawar, Radiology department. The study population comprised of CT KUB patients. 100 CT SCAN was carried out during our study duration. From the study over a period (4 months) a total number of 100 CT scan were done for finding kidney stones. Of these 64 patients having kidney stones and 36 were having no kidney stones. Among 64 patients 25 (37.3%) were males patients and 39 (58.2%) were female patients which are involved in the study. The most patients having kidney stones are under age of 35 to 50 years of age. Patients with right kidney stones were 44 (65.7 %) and left kidney stones were 29 (43.3%).

Patients with single right kidney stone were 24 (35.8%), single left kidney stones were 15 (22.4%), both kidneys having single stone were 16 (23.9), multiples stones in right kidney were 4 (6.0%), multiples stones in left kidney 3 (4.5 %), and both kidney having multiples stones were 2 (3.0 %).

Patients involved in the study having stone in the right renal pelvis were 25 (37.3 %), stone in the left renal pelvis were 4 (6.0%), right ureter 17 (25.4%), left ureteric stone were 5 (7.5%), right vesicoureteric stone 4 (6.0%), left vesicoureteric stone 1 (1.5 %) and urinary bladder stone 8 (11.9 %) were found in the participant involved in the study.

Male patients involved in the study were 25 (37.3%), among 25 male patients 20 (80.0%) patients have right kidney stones and 5 (20.0%) patients have left kidney stones. 14 (56.0%) male patients having single right kidney stone, single left kidney stones patients were 6 (24.0%), both kidney having single stone 4 (16.0%), multiples stones in right kidney was 1 (4.0%) of patients.

Numbers of female patients were 39 (58.2%). of these 39 female patients 25 (64.1 %) having right kidney stones and 14 (35.8%) were left kidney stone. Female patients with single right kidney stones were 10 (25.6%), single left kidney stone 9 (23.1%), both kidney having single stone were 12 (30.8%), multiples stones in right kidney were 3 (7.7%), multiples stones in left kidney 3 (7.7%), both kidney having multiples stones was 2 (5.1%). Female patients with stones right renal pelvis 18 (46.2%), left renal pelvis 3 (7.7%), right ureteric stone 7 (17.9%), left ureter 4 (10.3%), stone in the urinary bladder were 4 (10.3%), right VUJ stone 2 (5.1%) and left VUJ stones 1 (2.6%).

Discussion

Nephrolithiasis torments and annoys humanity for several centuries. Pakistan and other countries in the world, the conversion of urinary bladder stone to the other urinary tract stone is steadily increasing. Pakistan is one of the countries wherever the occurrence of this disease is high [10].

Ogata et al. Have carried out a study in which kidney stones were found mainly in the 3rd and 4th decade of lifecycle. The outcomes are comparable to our study, in the most patient between 35 and 50 years old was [11].

In 1996, Smith et al The seminal paper that helped in the age of CT as a first-line test for kidney stones, and reported results from 292 consecutive CT scan of the patients with the symptoms of acute flank pain. He obtained urolithiasis in CT

scan of the 34% of the patients and in 10.3% of the CT scan he found abnormalities, which are not related to stone disease. Our study includes 100 CT scans during study duration, in which 64% patients had kidney stones and 36% were not having kidney stones [12].

Conclusion

The prevalence of the kidney stone in current study sample of the selected tertiary care hospital of Peshawar NWGH. Female gender is more likely to developed kidney stone as compared to male. CT scan has been defined "Best imaging test to confirm the diagnosis of kidney stone". The computed tomography scan plays an important role in a number of clinical conditions such as the assessment of flank pain, urolithiasis monitoring, etc.

Recommendation

Further study is needed on a large scale to find out to frequency of kidney stone in population of KPK because of mineralized water coming from mountain ranges. The dietary habits of population of KPK include tomato in their diet that may be the cause of calcium oxalate kidney stones.

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