

Frequencies of Renal Pathologies in Patients with Flank Pain

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ABSTRACT

Objective: To determine the frequencies of renal pathologies in patient with flank pain.

Material and Method: All consecutive patients with flank pain reporting in urology department (Emergency and OPD) in one month, who fulfill the inclusion criteria, were advised to get an abdominal ultrasound report for their complaint. The information regarding patient along with ultrasound findings were recorded on a Performa designed with collaboration of Radiology Department. The data collected was entered in Epi Data. Statistical analysis was done by using Epi Info. The known cases of renal pathologies and other pathologies causing flank pain were excluded from the study.

Results: In three month 1938 patients reported with flank pain. Among these Male patients were 774 (39.94%) while Female patients were 1164 (60.06%). 426 (21.98) patients were suffering from diseases which were renal in origin. Among these 426 patients 189 (44.37%) were Male and 237 (55.63%) were Female. The frequencies of different renal pathologies were calculated which showed renal/ureteric calculus in 258 patients (13.31% of total patient and 60.56% of patients with renal pathologies), Hydronephrosis alone in 66 patients (3.41% of total patient and 15.49% of patients with renal pathologies), Hydronephrosis along with Hydroureter in 39 patients (2.01% of total patient and 9.15% of patients with renal pathologies), Cystic renal diseases in 51 patients (2.63% of total patient and 11.97% of patients with renal pathologies), Renal tumor in 09 patients (0.46% of total patient and 2.11% of patients with renal pathologies) and Pyonephrosis in 03 patient (0.15% of total patient and 0.7% of patients with renal pathologies).

Conclusion: It is not necessary that all patient presenting in hospital for flank pain have only renal pathologies. Our study concluded that other causes should also be taken under consideration. A careful history, examination and investigations can helpful in searching other causes of flank pain.

Key Words: Flank pain, Renal colic, Renal causes of flank pain, Frequency of renal pathologies, Ultrasound for flank pain,

INTRODUCTION

Flank pain or renal colic is very painful condition. A large number of patients visit emergency department annually with this problem. In United states more than 2 million people visit in emergency department with flank pain(1) and it's incidence is above 1/1000 people per year. (2) The cause of flank pain is diagnosed on clinical basis and it is not always necessary to get immediate imaging. However, nowadays in emergency departments, it is common practice to perform imaging. The reason may be due to fear of missing a condition which may be life threatening as for example Acute Appendicitis, Torsion of Ovaries or Aortic Aneurism. The imaging is also

used to confirm the diagnosis or to take a decision to discharge the patient. (3)

The recommendations of current guidelines is to get a CT scan as the initial test to establish the cause of flank pain. Although its sensitivity and specificity for urolithiasis is higher but it is expensive and exposes the patients to high doses of radiations. Moreover, despite an increase in the use of CT scan, it does not effect on management of flank pain. As compared to CT scan abdominal ultrasound has a lower sensitivity and specificity for urolithiasis but it is a safe imaging investigation for establishing the cause of flank pain. Ultrasound is a safe alternative when done by experienced Radiologist which can even be done in pregnancy.

(1, 4). In many countries the evaluation of flank pain is done by abdominal ultrasound and X-Ray KUB. (2) In Hospitals of Pakistan, due to non-availability or improper functioning of CT scan, the Physician or Urologist diagnose the patient depending on his clinical skills and the availability of imaging resources other than CT scan just like abdominal ultrasound and X-Ray KUB. (5)

The main cause of flank pain is considered as urolithiasis. These diseases are health problem worldwide. (6) Pakistan is part of Afro-Asian stone Belt which have shown consistently high prevalence of stone diseases. About 12% of population suffer from urolithiasis. The recurrence rate of this health problem is about 50% in five years. Both in children and adults urolithiasis constitute one of major work load in emergency department. (7) Considering this high prevalence every patient reporting in emergency department with flank pain is treated as a patient of urolithiasis until and unless proved otherwise. In this study we tried to find out frequency of renal pathologies in patients with flank pain so that other causes should not be ignored.

MATERIAL AND METHOD

Place of Study: This study was carried out in Nawaz Sharif Social Security Hospital, Lahore.

Duration of Study: The total duration of study was three months.

Type of Study: It is an observational study.

Inclusion Criteria: All patients with flank pain unilateral or bilateral with or without urinary symptoms.

Exclusion Criteria: All patients which have an established cause of flank pain.

Method: All consecutive patients with flank pain reporting in urology department (Emergency and OPD) in three months, who fulfill the inclusion criteria, were advised to get an abdominal ultrasound report for their complaint. Abdominal ultrasound was used as a tool to identify any disease which was renal in origin (Renal pathologies). The information regarding patient along with ultrasound findings were recorded on a Performa designed with collaboration of Radiology Department. The data collected was entered in Epi Data.

Statistic Analysis: All the data collected is cleaned and entered in Epi Info. The frequencies of different variables were collected and prepared for presentation.

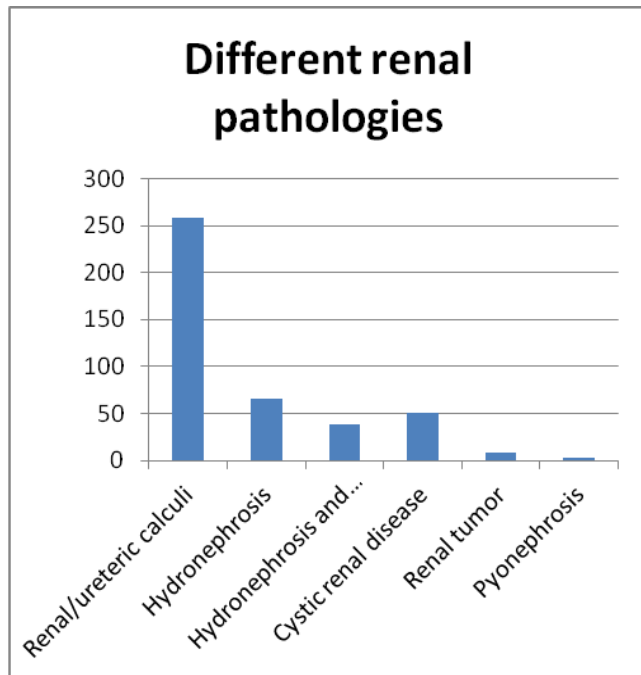
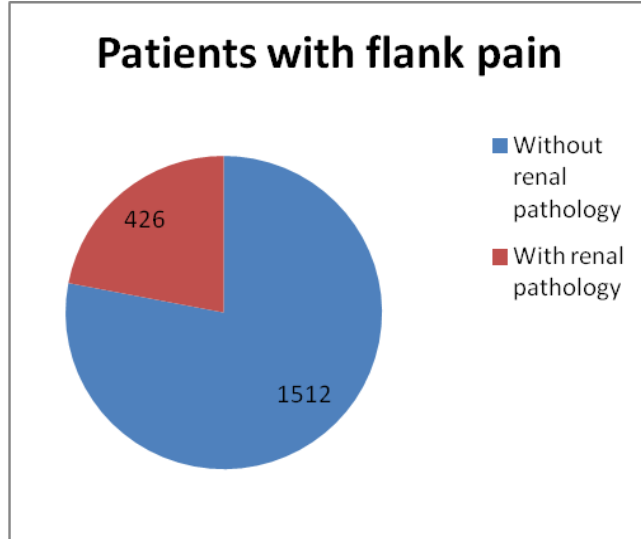
RESULTS

In three months 1938 patients reported with flank pain. Among these Male patients were 774 (39.94%) while Female patients were 1164 (60.06%). 426 (21.98) patients were suffering from diseases which were renal in origin. Among these 426 patients 189 (44.37%) were Male and 237 (55.63%) were Female. The frequencies of different renal pathologies were calculated which showed renal/ureteric calculus in 258 patients (13.31% of total patient and 60.56% of patients with renal pathologies), Hydronephrosis alone in 66 patients (3.41% of total patient and 15.49% of patients with renal pathologies), Hydronephrosis along with Hydroureter in 39 patients (2.01% of total patient and 9.15% of patients with renal pathologies), Cystic renal diseases in 51 patients (2.63% of total patient and 11.97% of patients with renal pathologies), Renal tumor in 09 patients (0.46% of total patient and 2.11% of patients with renal pathologies) and Pyonephrosis in 03 patient (0.15% of total patient and 0.7% of patients with renal pathologies).

Among renal pathologies 258 patients were suffering from urolithiasis 108 were male patients (5.57% of total patients, 25.32% of patients with renal pathologies and 41.86% of patients with urolithiasis) while 150 patients were female (7.74% of total patients, 35.21% of patients with renal pathologies and 58.14% of patients with urolithiasis). 66 patients had only hydronephrosis among them 24 patients were male (1.24% of total patients, 5.63% of patients with renal pathologies and 36.36% of patients with hydronephrosis) and 42 patients were female (2.17% of total patients, 09.86% of patients with renal pathologies and 63.64% of patients with hydronephrosis). Among 39 patients having both hydronephrosis and hydroureter 18 were male patients (0.93% of total patients, 04.23% of patients with renal pathologies and 46.15% of patients with hydronephrosis and hydroureter) and 21 patients were female (01.08% of total patients, 04.93% of patients with renal pathologies and 53.85% of patients with hydronephrosis and hydroureter). Among 51 patients with renal cystic diseases 27 were male (01.39% of total patients, 06.34% of patients with renal pathologies and 52.94% of patients with renal cystic diseases) and 24 were female (01.24% of total patients, 05.63% of patients with renal pathologies and 47.06% of patients with renal cystic diseases). Among 09 patients of renal tumor all were male patients (0.46% of total patients,

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2.11% of patients with renal pathologies and 100% of patients with renal tumor) and 03 male patient was suffering from pyonephrosis (0.15% of total patients, 0.7% of patients with renal pathologies and 100% of patients with pyonephrosis).



DISCUSSION

Flank pain is a common symptom in patients presenting in emergency department worldwide. In our study we tried to explore the renal causes of this complaint and how much this pain is renal in origin. In our study only about one fourth of

patients (21.98%) showed renal pathology which seems a low percentage. The reason of this is we did not associated it with urinary symptoms which showed 76% renal causes in other studies which were specified by complaint of renal colic. (8, 9) In this study the only symptoms of flank pain was used because due to high prevalence of stone diseases all patients are dealt with provisional diagnosis of urolithiasis. In this situation many other serious or life threatening conditions are ignored which sometime results in serious complications.

The renal causes of flank pain are low which indicates that we should concentrate on improving our history taking and physical examination skills to think about other causes of flank pain from a simple boil on skin to aortic aneurism. Every patient with complaint of flank pain wants special attention and a protocol of investigations to establish a diagnosis and manage life threatening conditions. This study also shows that among the renal causes most of the patients have renal stone or hydronephrosis or hydroureter. It is a common practice here in emergency departments that intravenous fluid is given to these patients which must be discouraged as this fluid overload increases in the intensity of pain. So our study will be helpful to physician working in emergency department in thinking about extra renal causes of flank pain.

CONCLUSION

It is not necessary that all patient presenting in hospital for flank pain have only renal pathologies. Our study concluded that other causes should also be taken under consideration. A careful history, examination and investigations can be helpful in searching other causes of flank pain.

REFERENCES

1. Herbst MK, Rosenberg G, Daniels B, Gross CP, Singh D, Molinaro AM, et al. Effect of provider experience on clinician-performed ultrasonography for hydronephrosis in patients with suspected renal colic. *Annals of emergency medicine*. 2014;64(3):269-76.
2. Pernet J, Abergel S, Parra J, Aayed A, Bokobza J, Renard-Penna R, et al. Prevalence of alternative diagnoses in patients with suspected uncomplicated renal colic

- undergoing computed tomography: a prospective study. *Cjem*. 2015;17(01):67-73.
3. Nicolau C, Claudon M, Derchi LE, Adam EJ, Nielsen MB, Mostbeck G, et al. Imaging patients with renal colic—consider ultrasound first. *Insights into imaging*. 2015;6(4):441-7.
 4. Yan JW, McLeod SL, Edmonds ML, Sedran RJ, Theakston KD. Normal renal sonogram identifies renal colic patients at low risk for urologic intervention: a prospective cohort study. *CJEM*. 2015;17(01):38-45.
 5. Abbasi A, Siyal A, Soomro MI. Bowel preparation before X-Ray intravenous urography: Is it necessary? *Rawal Medical Journal*. 2015;40(2):174-6.
 6. Schoenfeld EM, Poronsky KE, Elia TR, Budhram GR, Garb JL, Mader TJ. Young patients with suspected uncomplicated renal colic are unlikely to have dangerous alternative diagnoses or need emergent intervention. *Western Journal of Emergency Medicine*. 2015;16(2):269.
 7. Manzoor S, Hashmi AH, Sohail MA, Mahar F, Bhatti S, Khuhro AQ. Extracorporeal shock wave lithotripsy (ESWL) vs. ureterorenoscopic (URS) manipulation in proximal ureteric stone. *J Coll Physicians Surg Pak*. 2013;23(10):726-30.
 8. Hong DY, Kim JW, Lee KR, Park SO, Baek KJ. Epidemiologic and clinical characteristics of patients presenting with renal colic in Korea. *Urology journal*. 2015;12(3):2148-53.
 9. Moore CL, Daniels B, Singh D, Luty S, Molinaro A. Prevalence and clinical importance of alternative causes of symptoms using a renal colic computed tomography protocol in patients with flank or back pain and absence of pyuria. *Academic Emergency Medicine*. 2013;20(5):470-8.