



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.836449>Available online at: <http://www.iajps.com>

Research Article

**MANAGEMENT OF RENAL COLIC IN PATIENTS WITH
RENAL CALCULUS**Anam Jawad^{1*}, Anum Yousaf², Dr. Saleha Sadeeqa³¹Student of Pharm.D, final year, Institute of Pharmacy, Lahore College for Women University, Lahore, Punjab, Pakistan.²Student of Pharm.D, final year, Institute of Pharmacy, Lahore College for Women University, Lahore, Punjab, Pakistan.³Director, Institute of Pharmacy, Institute of Pharmacy, Lahore College for Women University, Lahore, Punjab, Pakistan.**Abstract:**

Renal colic is the pain due to different kidney abnormalities. The patients with renal calculus/calculi mostly experience acute renal colic which begins in the kidney region and radiating forward and down to the abdomen, genitalia, and legs, not relieved by the change in positions. This report emphasizes on the management of renal colic in patients with renal calculus by prescribed medications. A part of the report also shows non-medicated remedies and alternative medication systems adopted by the patients to treat renal colic. A questionnaire based study was carried out on 50 out patients and in patients with renal calculus who were also experiencing pain due to it. The patients were selected randomly at, Urology Department, Mayo Hospital, Lahore. Renal colic was mainly treated with non-steroidal anti-inflammatory drugs, opioid analgesics and local analgesics. Other medications used treat renal colic indirectly were calcium channel blockers, alpha blockers, corticosteroids, antibiotics and anti-emetics. Intravenous saline was also administered. These medications always relieved renal colic. Side effects mainly seen were GIT disturbances, nausea, vomiting and dizziness. Non-medicated or home remedies were usually adopted by the patients like lemon juice or warming the ached area. Homeopathy and ayurvedic medicines were among popular alternative treatment systems used.

Objectives: The aims and objectives of the study are:

To study the prescribed medications for management of renal colic by in patients with renal calculus.

To observe alternative treatment systems, dietary measures and non-medicated (home) remedies adopted by patients for management of renal colic.

Keywords: Renal colic, renal calculus, NSAIDs, opioid analgesics, non-medicated remedies.

Corresponding Author:**Anam Jawad Siddiqi,**Lahore College for Women University,
Lahore.E-mail: anam.siddiqi12@ymail.com

Phone #: +92437334819

QR code



Please cite this article in press as Anam Jawad Siddiqi et al, *Management of Renal Colic in Patients with Renal Calculus*, Indo Am. J. P. Sci, 2017; 4(07).

INTRODUCTION:

A kidney stone, also called renal calculus (from the Latin *rēnēs*, "kidneys" and *calculus*, "pebble") is a solid concretion or crystal aggregation formed in the kidneys formed from dietary minerals or salts in the urine (nephrolithiasis) [1]. Renal colic is sharp, severe pain in the lower back that radiates down the flank and into the groin; associated with the passage of a renal calculus through the ureter as it dilates the ureter, causing ureteral spasms as the calculus is forced along the narrow tube; usually of sudden onset, severe and colicky (intermittent), and not improved by changes in position [2].

Symptoms are severe pain in the side and back, below the ribs, pain on urination, pink, red or brown urine, cloudy or foul-smelling urine, nausea and vomiting, persistent need to urinate, urinating more often than usual, fever and chills if an infection is present, urinating small amounts of urine [3].

Non-steroidal anti-inflammatory drugs (NSAIDs) should be offered first-line for the relief of the severe pain of renal colic. NSAIDs are more effective than opioids for this indication and have less tendency to cause nausea [4]. However, if opioid analgesics are to be given, parenteral morphine is required in severe renal colic pain, this works quickly and can provide pain relief in the time taken for an NSAID to work. Acetaminophen is also among commonly used analgesic for renal colic [5].

Medical expulsive therapy may be used to facilitate the passage of the stone. It is useful in cases where there is no obvious reason for immediate surgical

removal. Calcium-channel blockers (eg, nifedipine) or alpha-blockers (eg, tamsulosin) are given. A corticosteroid such as prednisolone is occasionally added when an alpha-blocker is used but should not be given as monotherapy [6].

Other medications used may be: local analgesic (Lidocaine), Hyoscine butyl bromide, anti-diuretics, anti-emetics, antibiotics, intravenous (I/V) hydration therapy [7].

Some popular alternative treatment systems which may be adopted by patients are Homeopathy, Ayurveda, Unani pathy, Chinese medicines etc [8].

Non-medicated therapies or home remedies to reduce renal colic include local heating of area, lemon juice + honey, apple cider, application of olive oil, yoga etc [9].

METHODOLOGY:

The study done in this report is exploratory. An observational and questionnaire based study was conducted from July to September 2016 about management of renal colic in patients with renal calculus, 50 inpatients were randomly selected for the study at Mayo hospital, Lahore, Pakistan and Services hospital, Lahore, Pakistan. The patients of every age were included. A data collection form was designed and was filled during face to face interviews with the patients and health care providers. The data collected was computed and results were interpreted in the form of graphs.

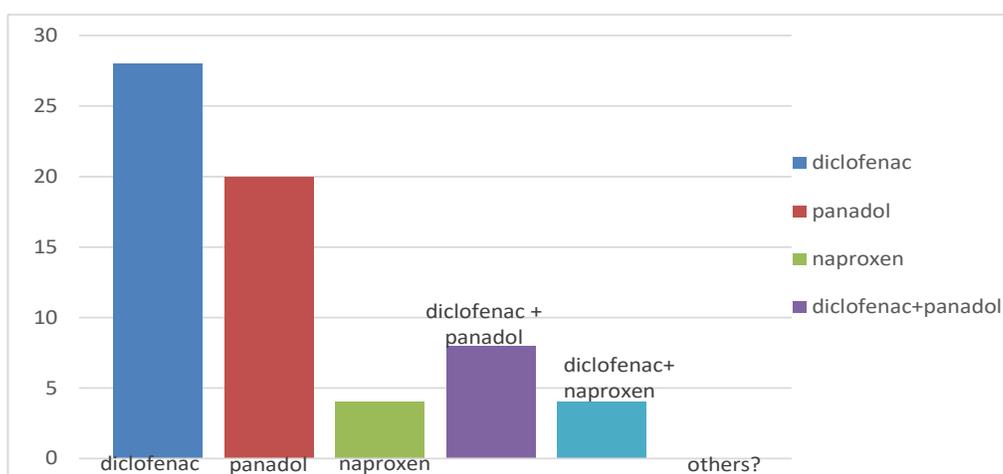
RESULTS:

Fig 1: Prescribed NSAIDs:

Among NSAIDs, diclofenac and Panadol (acetaminophen) were mostly prescribed. Fewer patients were given naproxen. Combination of diclofenac with Panadol (acetaminophen) or naproxen was also given in some cases.

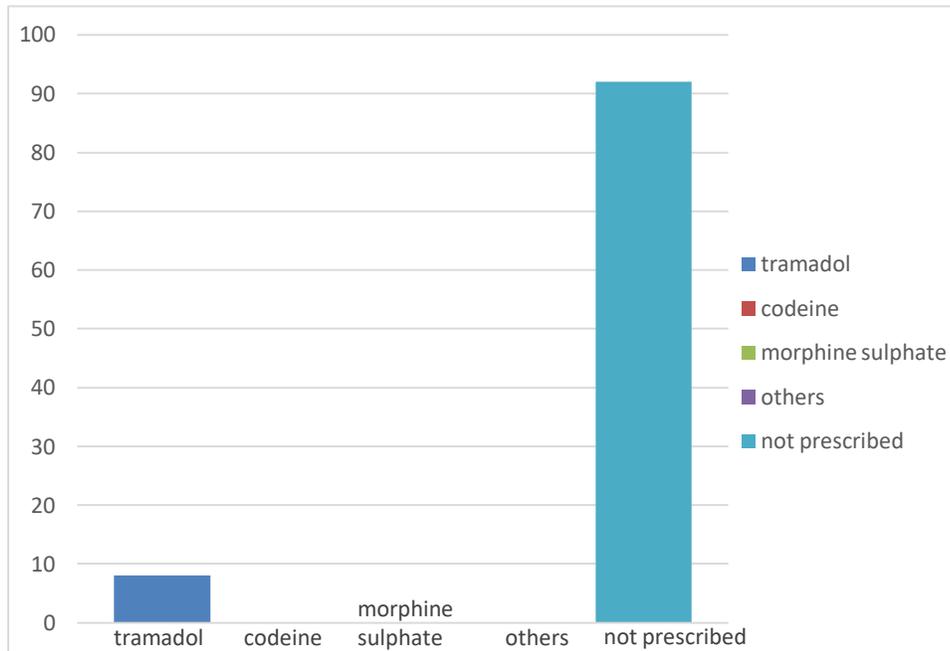


Fig 2: Prescribed opioid analgesics:
Mostly tramadol was prescribed among oral opioid analgesics.

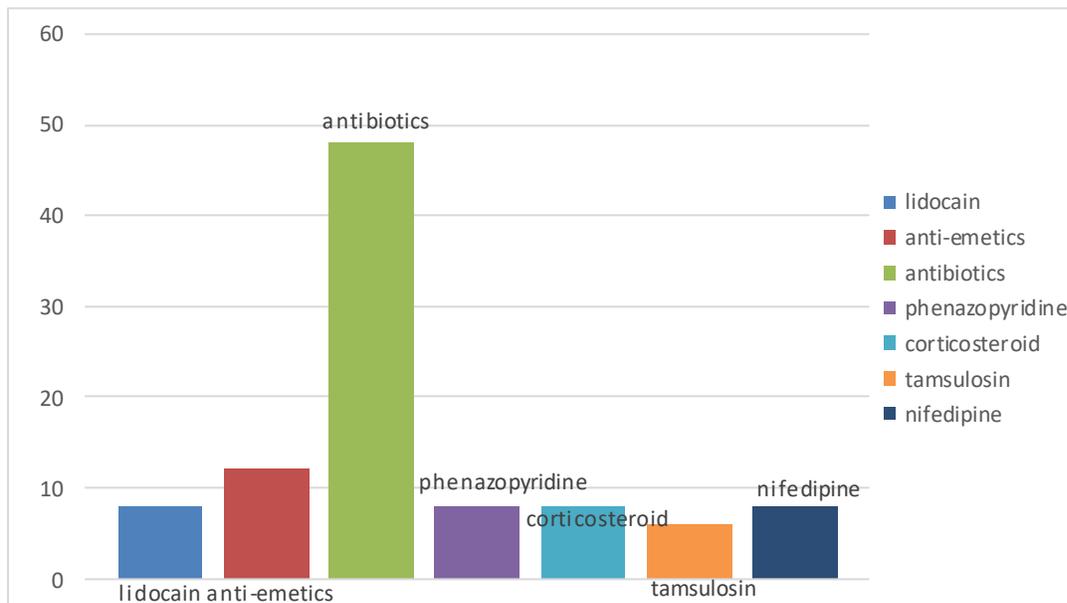


Fig 3: Other medications prescribed:
Mostly antibiotics were prescribed. Some patients were also given anti-emetics, corticosteroids, lidocaine, phenazopyridine, tamsulosin and nifedipine.

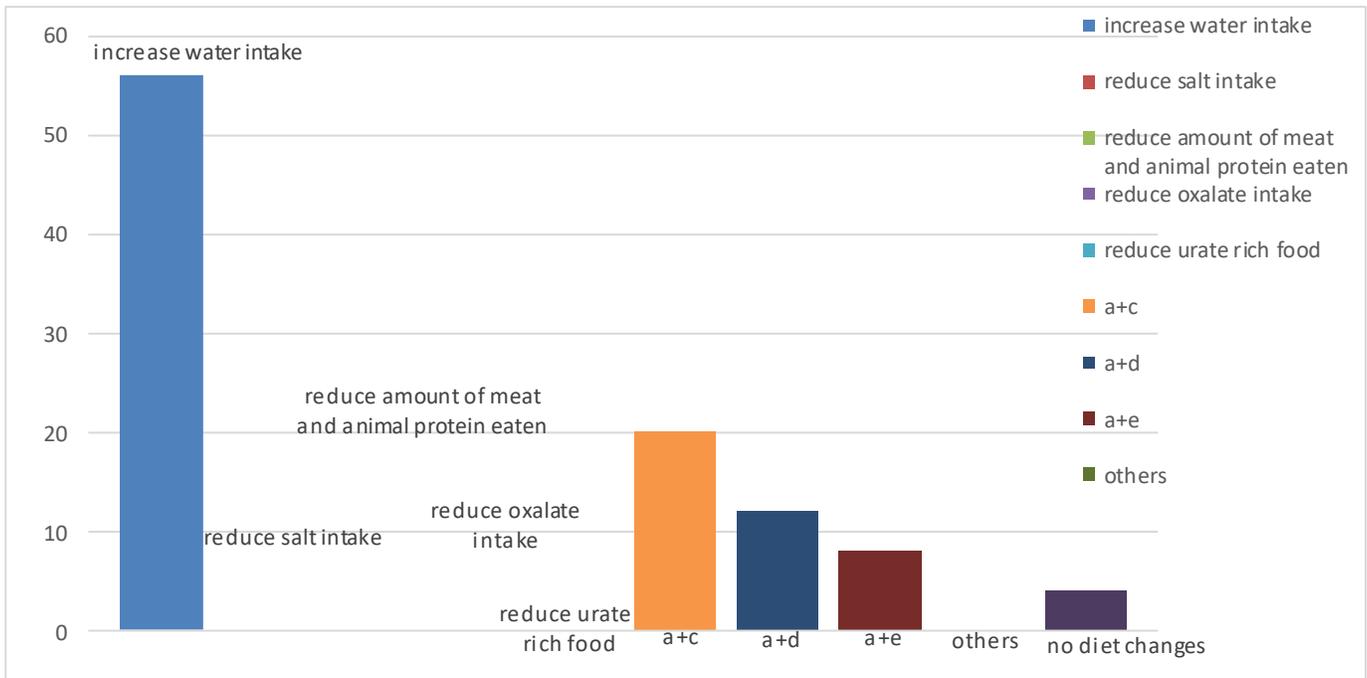


Fig 4: Diet changes:

The diet changes prescribed by the physicians to the patients was mostly increased water content. Other diet changes prescribed were reducing amount of meat, urate and oxalate intake along with increasing water intake.

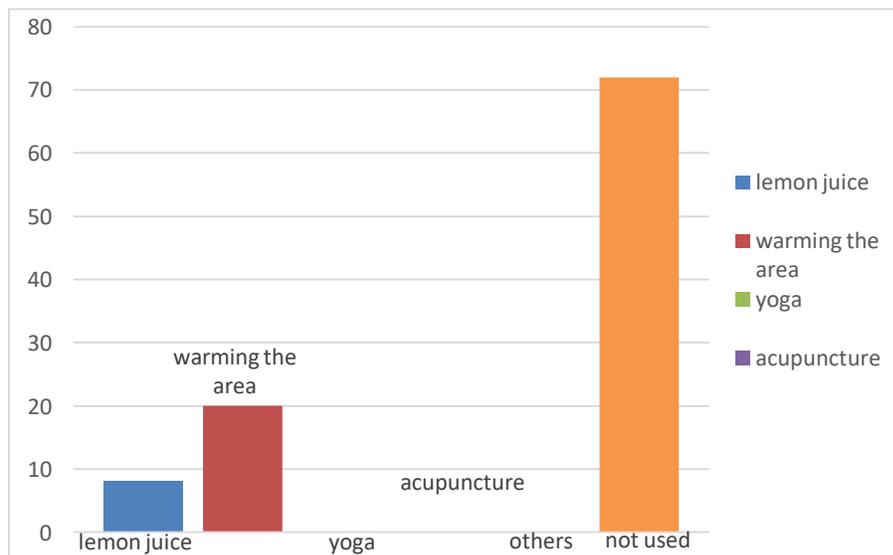


Fig 5: Life style changes prescribed by Physician:

Non medicated remedies for relieving the pain adopted by the patients were lemon juice and warming the area.

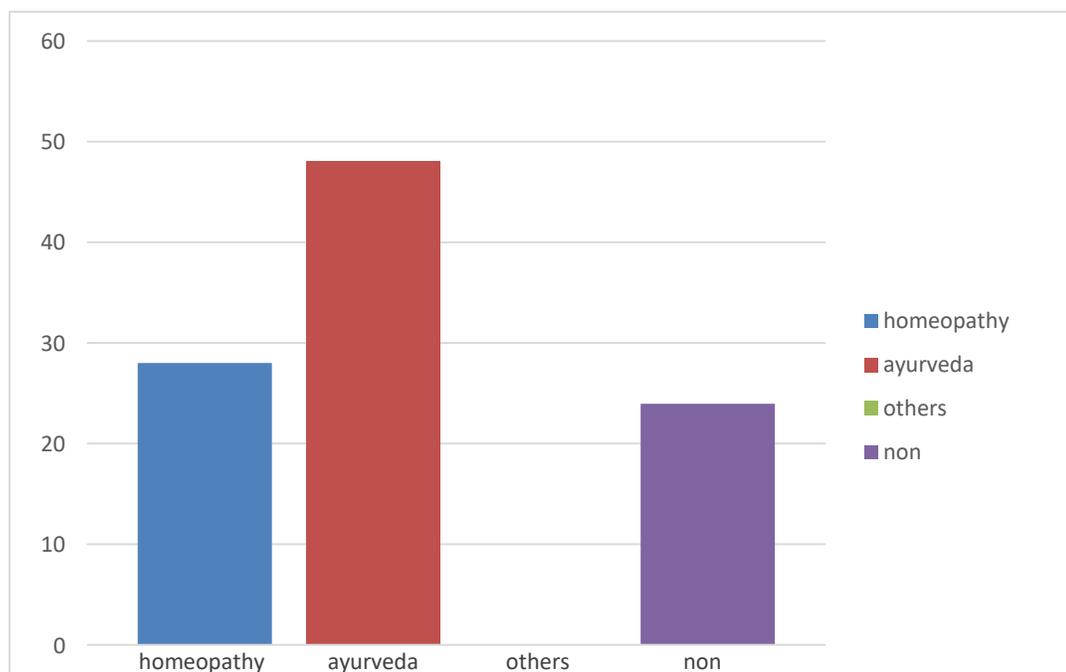


Fig 6: Alternative treatment systems used

Ayurveda and homeopathy were mostly used alternative treatment systems adopted.

DISCUSSION:

Renal colic is the pain in the kidney which may arise due to different kidney abnormalities. The patients experience acute pain beginning in the kidney region and radiating forward and down to the abdomen, genitalia, and legs. The areas of renal colic were the site of the kidney, lower back of the body or the groin area. Renal calculus was observed occur more in men of age more than 30 than in women. Some of the patients were having renal colic since birth due to calculus. Some patients of renal calculus were with recurrent renal calculus with in five to seven years.

Medications mostly given to treat renal colic were: oral and parenteral NSAIDs - non-narcotic analgesics (diclofenac, Panadol, naproxen) and oral and parenteral opioid - narcotic analgesics (nalbuphine, tramadol), local analgesics (lidocaine, phenazopyridine). No opioid-NSAID combination was prescribed. Other medications prescribed for renal colic were: calcium channel blocker (nifedipine), alpha 1 selective blocker (tamsulosin), corticosteroids (hydrocortisone), antibiotics and anti-emetics.

Calcium channel blockers and alpha blockers were used as spasmolytics to treat renal colic in some patients. Calcium channel blockers, alpha blockers and corticosteroids are main components of medical exclusive therapy to treat renal colic as well pass the stone without surgery. Anti-emetics are also sedatives

so were used for mild renal colic. Antibiotics reduce the infection and thus treat renal colic.

Intravenous saline solution was administered once or at least twice daily. But the administration of intravenous saline solution is quite controversial. On one hand, it treats dehydration which is the one of the cause of stone formation and this dehydration can also be the result of vomiting induced by severe renal colic. On the other hand, if the stone is free or not fixed, it can move towards ureter because of frequent urination and can cause obstruction. Almost all of the patients were prescribed surgical treatment or laser treatment for renal calculus.

Diet changes prescribed to most of the patients were to increase intake of water, juice and liquid content, reduce oxalate rich, urate rich diet and to reduce intake of animal protein and meat.

Non-medicated or home remedies adopted by some of the patients were warming the aching area and use of lemon juice.

Alternative medication systems other than allopathic were adopted by most of the patients, which were homeopathy and ayurvedic medicines or both.

Most of the patients had always felt complete relief in pain symptoms. Few patients were not satisfied with their pain-relieving medication because they sometimes or never relieved the pain.

Side effects of medications for renal colic observed by some patients were GIT disturbances, dizziness

and nausea, vomiting. Most of the patients did not experienced any side effects.

Almost all the patients have never consulted any pharmacist for their renal colic.

CONCLUSION:

Renal colic occurs at the lower back, at the site of the kidney or growing forwards towards the groin region of the body and legs. Renal colic is mainly treated with non-steroidal anti inflammatory drugs (non narcotic analgesics), opioid analgesics and local analgesics. Other medications which treat renal colic indirectly are calcium channel blockers, alpha blockers, corticosteroids (these three also used in medical exclusive therapy), antibiotics and anti-emetics. Intravenous saline is also administered. These medications almost always relieved renal colic. Side effects mainly seen are GIT disturbances, nausea, vomiting and dizziness.

Non-medicated or home remedies are usually adopted by the patients like lemon juice or warming the ached area. Homeopathy and ayurvedic medicines are among popular alternative treatment systems used. Pharmacists are usually not consulted, although they may contribute a lot towards treatment and disease counselling.

ACKNOWLEDGEMENT:

We are cordially thankful to Dr. Saleha Sadeeqa, Director Institute of Pharmacy, Lahore College for Women University, Lahore, Prof. Dr. Muhammad Amjad Shahzad, MS of Mayo hospital, Lahore and Prof. Dr. Hamid Mehmood Butt, MS of Services Hospital, Lahore who allowed us to carry out our study with in the premises of the hospital.

REFERENCES:

- 1.Malvinder S Parmar, Kidney stones, *BMJ*, 2004;328:7453,1420-1424.
- 2.Shahida Banu Shamsuddeen, Raffia bano, Risk Factors of Renal Calculi, *The Bangladesh journal of scientific research- Journal of Dental and Medical Sciences (IOSR-JDMS)*, 2013: 11:6, 90-95.
- 3.Andrew J. Portis and Chandru P. Sundaram, Diagnosis and Initial Management of Kidney Stones, *American Family Physician*, 2001,;63:7, 1329-1339.
- 4.Gregory E. Tasian and Lawrence Copelovitch, Evaluation and Medical Management of Kidney Stones in Children, *The Journal of Urology*, 2014: Vol. 192, 1329-1336.
- 5.Samad EJ Golzari, Hassan Soleimanpour et al., and Therapeutic Approaches for Renal Colic in the Emergency Department: A Review, *Anesthesiology Pain and Medicine*, 2014: 4:1.
- 6.Felix Grases et al. , Renal lithiasis and nutrition , *Nutrition Journal*, 2006: 5:23, 1475-2891

7.Holdgate A, Pollock T, Nonsteroidal anti-inflammatory drugs (NSAIDs) versus opioids for acute renal colic, *Chocrane Database of Systemic Review (PubMed)*, 2005: 2, CD004137.

8.Seitz C, Liatsikos E, Porpiglia F, et al, Medical therapy to facilitate the passage of stones: what is the evidence?, *Journal of Endourology (PubMed.gov)*, 2009: 56:3, 455-71.

9.Honeck P, Wendt-Nordahl G, Krombach P, et al, Does open stone surgery still play a role in the treatment of urolithiasis? Data of a primary urolithiasis center, *Journal of Endourology (PubMed)*, 2009: 23:7, 1209-12.