

Available online on 15.11.2018 at <http://jddtonline.info>



# Journal of Drug Delivery and Therapeutics

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Case Study

## Successful treatment of ureteric calculi with constitutional homoeopathic medicine *Lycopodium clavatum*: A Case report

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### ABSTRACT

**Introduction:** Formation of stone in the urinary tract, kidney, ureter and bladder is called as Urolithiasis. Formation of urinary stones is very common. About 5-15% population are affected with urinary stone, and, therefore, causes high morbidity in comparison to the above types of stone formation. Shock wave lithotripsy and ureteroscopy along with conservative treatments are the most common approaches for the treatment of calculi, although considered as expressive in one hand, and on the other hand, such interventions may lead to complications. Therefore, alternative medicines give a second thought for the treatment of urolithiasis because it avoids surgical interventions. Here we present a case study for the successful treatment of urolithiasis by a homoeopathic medicine *Lycopodium clavatum* in a 43 years old male.

**Case Profile:** A 43-year-old male patient with intense pain in the right loin for 5-6 days, increased frequency of urination, ineffectual urination, severe pain during urination, and finally with the pain score was 9, was considered for treatment in the present study. Based on his complete case history, *Lycopodium clavatum* at potencies of 0/1 to 0/6 was prescribed to him.

**Conclusion:** Correct homoeopathic organ specific or constitutional formulation(s) selected based on specific important symptoms can also be efficacious in diseases such as ureteric stone. Constitutional medicine *Lycopodium clavatum* is usually prescribed when the patient is with right side pain with ureteric stone and it is justified in the present case report. Randomized control trial is suggested to ascertain the results obtained in the present study i.e. successful treatment of urolithiasis with the constitutional homeopathic formulation *Lycopodium clavatum*.

**Keywords:** Constitutional medicine, homoeopathy, *Lycopodium clavatum*, Ureterolithiasis

**Article Info:** Received 05 Oct, 2018; Review Completed 22 Oct 2018; Accepted 23 Oct 2018; Available online 15 Nov 2018



### Cite this article as:

Hati AK, Rath S, Nayak C, Raj I, Sahoo AR, Paital B, Successful treatment of ureteric calculi with constitutional homoeopathic medicine *Lycopodium clavatum*: A Case report, Journal of Drug Delivery & Therapeutics. 2018; 8(6):1-7  
DOI: <http://dx.doi.org/10.22270/jddt.v8i6.2043>

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### INTRODUCTION

Urolithiasis, otherwise is also called as urinary calculus, is the formation of stones (calculi) anywhere in the urinary tract <sup>[1]</sup>. It is one of the most common afflictions observed in human. It is presumed that about 5-15% of population worldwide experience this disease during their life span <sup>1,2</sup>. Although, the exact mechanism of urinary stone formation in human is needed to be explored, it is found that urolithiasis is associated with many risk factors that act as either cause or effect. High urine calcium levels, obesity, calcium supplements, hyperparathyroidism, gout, certain

foods, and drinking fewer fluids are few to name them. The development of the stones is associated with to decrease in urine volume or increase in excretion of stone-forming components such as calcium, oxalate, urate, cystine, xanthine, and phosphate.

Urinary calculus is typically classified based on the organ of the stone formation. For example, nephrolithiasis (stone in kidney), ureterolithiasis (stone in ureter) and cystolithiasis (stone in urinary bladder) <sup>3</sup>. Stone(s) size < 5mm diameter can pass naturally without showing any symptom(s) in patients but a stone of > 5 mm diameter

causes obstruction of the ureter. It could be resulted in experiencing severe pain in the lower back or abdomen.<sup>[2,3]</sup> Stones of size 5–7 mm have a 50% chance of passage and those >7 mm mostly require surgical intervention.<sup>2</sup> Currently, ureteroscopy or Extracorporeal ShockWave Lithotripsy (ESWL) are the most common approaches followed for the treatment of ureterolithiasis.<sup>4</sup> Percutaneous nephrolithotomy has emerged as a suitable alternative to surgery in the definitive management of more bulky, complicated stones. This process is deployed either alone or in combination with ESWL for the successful treatment of urolithiasis. However, following the ESWL approach, 63–85% of acute renal injury may be noticed in patients.<sup>5,6</sup> Therefore, an alternative therapy such as homeopathy is always beneficial for treatment of ureterolithiasis. Many homeopathic remedies such as *Hydrangea arborescens*, *Berberis vulgaris*, and *Ocimum canum* are well-known homeopathic medicines for calculus diseases; It is popularly known as “the stone breaker”<sup>7, 8</sup>. *Lycopodium clavatum* is also another potent medicine that believed to be associated with removing urinary stones albeit authentic literature about it is still scanty.

In India, about 13% populations consume exclusively homeopathy formulations for their health issues [2]. Surgical intervention is avoided and the remedies are more often cheaper and side effects less, are few of the reasons why people prefer homeopathy for their health care. On the other hand, homeopathy has been proved to be a boon for patients such as aged ones, hypertensive and diabetics, in whom, surgery is a risky<sup>9</sup>. Organopathy implies that a defect in an organ should be corrected, by removing the impairing influence. The appropriate remedy is the agent employed to stimulate repair within that organ<sup>10,11</sup>. Similarly, Constitutional homeopathy denotes to the management of a individual as a whole, counting past and present symptoms and if accurately implemented, homeopathic constitutional care can elicit a intense healing response. So, homeopathy can be extremely effective in treating chronic and long-term health problems without surgical interventions. Keeping this concept of constitutional care in the background, *Lycopodium clavatum* was prescribed and the usefulness of this homeopathic medicine in the treatment of urinary calculi is highlighted in the present case.

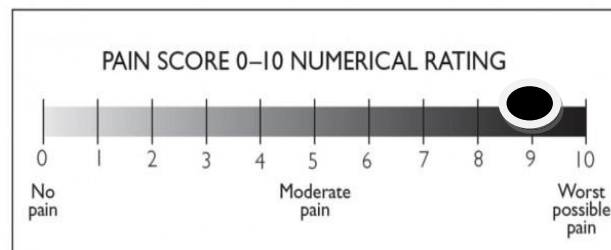
## MATERIALS AND METHODS

A patient has come to the clinic with the following information having a clear case of ureteric calculi.

### Patient Information

A 43-year-old male of average health, fair complexion came to clinic (Dynamic Homeopathic Centre, 4- Industrial colony, Unit-III, kharvel Nagar, Bhubaneswar, Odisha, India) on 26<sup>th</sup> Nov. 2017 with intense pain in the right loin with an increased frequency of urination since 6 days. Ineffectual urging to urinate, severe pain at close of

urination was also the major symptoms. The pain was almost constant without any significant modality. He was experiencing prostatic emission during defecation, premature ejaculation during coition with strong sexual desire, heart burning but less in afternoon. The numerical rating scales (NRS) his pain score was 9 (Fig. 1). Several symptoms were considered to make a report of the patient (Table 1).



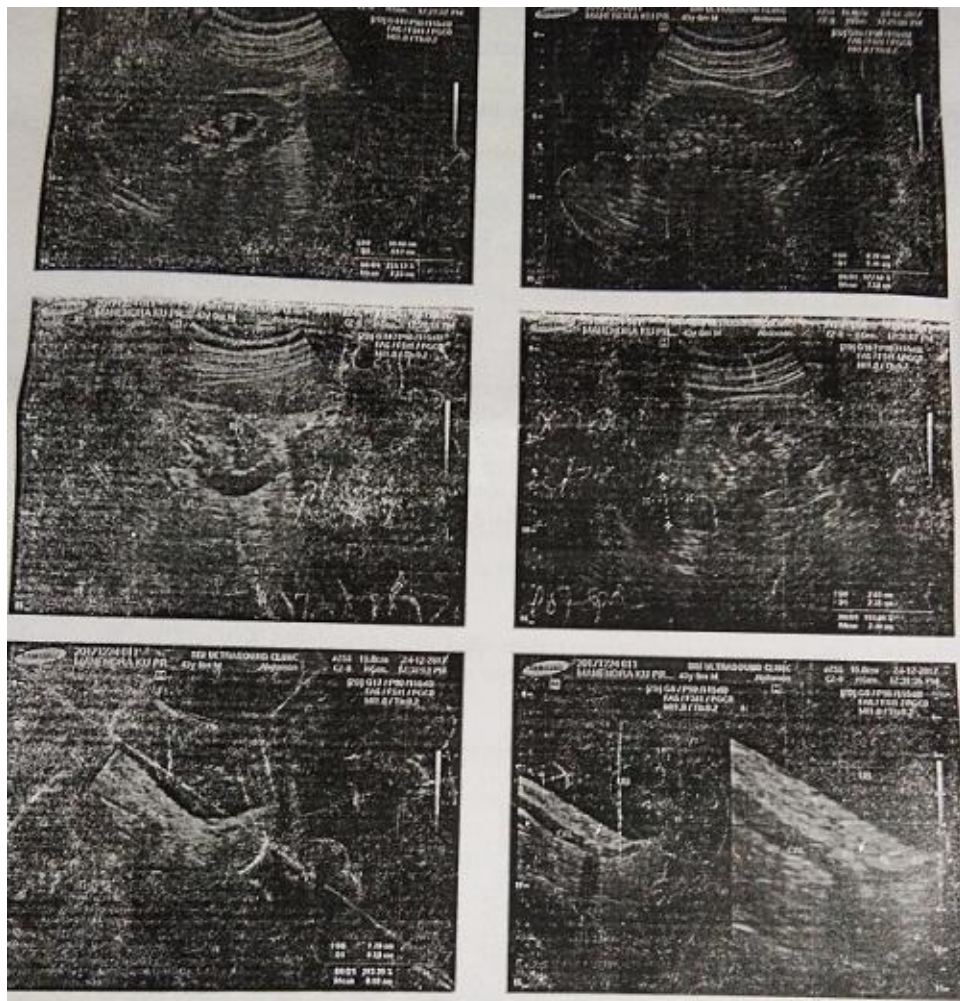
**Figure 1:** The pain score of the patient before treatment.

**Table 1:** Symptoms considered for prescription

Sl. No.	Symptoms
1	Irritability
2	Ambitious
3	Anxiety Health about
4	Want of self confidence
5	Hot patient
6	Salt, sweet, warm food desire
7	Right sided ureteric calculi
8	Prostatic emission stool during
9	Premature ejaculation coition during
10	Heartburn afternoon
11	Urging ineffectual
12	Urethra pain at close of urination

The ultrasonography imaging revealed that one right ureter is dilated and a calculus had the size of 12.0 x 6.0 mm<sup>2</sup> at lower ureter with moderate hydronephrosis and also left renal cortical cyst (Fig. 2(a), Table 2). He had experienced the pain suddenly and has it for the last 6 days he arrived the clinic. He had taken some allopathic medication that provided him only temporary relief.

He was suffering from similar renal calculi two years ago and that was cured by allopathic treatment. In his past, he was suffering from tuberculosis for which he took anti tubercular treatment of modern medicine. His family history depict that his father had benign prostatic hyperplasia. He had two well-grown children. He was a non-vegetarian without any specific addiction. He was a hot patient with salt, sweet, warm food desire and normal appetite and thirst. His bowel habits were normal. The patient was irritable, ambitious, anxiety with want of self-confidence.



(a)-before the treatment schedule.



(b)-after the treatment schedule.

Figure 2: Ultrasonography of whole abdomen before and after the treatment schedule.



**Table 2:** Ultrasound report of whole abdomen before treatment

Report on USG abdomen and Pelvis	
<b>Liver</b>	Normal in size, echogenicity & echo texture. No mass or secondaries is seen. Hepatic vascular channels are normal. Intra-hepatic biliary radicles are not dilated.
<b>Gall Bladder</b>	Norma. Wall is normal in thickness. No intra luminal calculus or mass lesion is seen.
<b>Common bile duct</b>	Normal in caliber. No calculus or mass is seen in the lumen.
<b>Spleen</b>	Normal in size. No focal lesion is seen in parenchyma. SV is normal.
<b>Pancreas</b>	Normal in size & echogenicity. No calculus or mass lesion is seen. PD is normal.
<b>Right kidney</b>	Normal in size. Cortical echogenicity is normal. Corticomedullary differentiation is maintained. <b>Moderate hydronephrosis.</b> No calculus or mass is seen. <b>Right ureter is dilated and a calculus of size 12.0 mm x 6.0 mm at lowers ureter.</b> Size of kidney 10.0cmx4.6cm
<b>Left kidney</b>	Normal in size. Cortical echogenicity is normal. Corticomedullary differentiation is maintained. No calculus, mass or hydronephrosis is seen in left kidney. <b>A cystic 2.6 cm x 2.3 cm at upper pole.</b> Left ureter in not dilated. Size 9.7cmx5.4cm
<b>Urinary Bladder</b>	Normal. Wall is normal in thickness. No intra luminal calculus or mass lesion is seen.
<b>Prostate</b>	Normal in size and echo texture. Mild calcifications seen at peri urethral region. Capsule is intact. Seminal vesicles are normal. Prostate measure 3.5cmx3.1cm x3.3cm. Prostate volume 19cm.
<b>No mass or collection is seen in RIF. No sonographic tenderness present. No ascites or para-aortic adenopathy seen.</b>	
<b>Impression</b>	<b>Right uretric calculus in lower ureter. Left renal cortical cyst.</b>

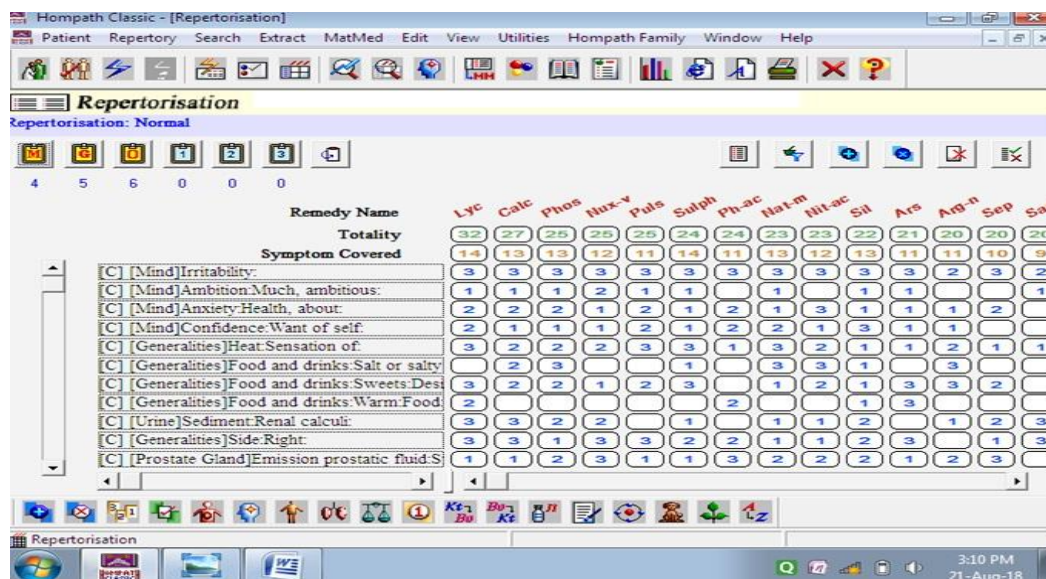
After assessing and analyzing the case, it was found that the patient has provided a few significant symptoms only (Fig. 3, Table 1). After repertorization through homopath classic software, constitutional medicine *Lycopodium clavatum* (Lyco) 0/1 and 0/2 (1oz, 8 dose) once a day in morning with empty stomach was prescribed for 16 days (Table 3). Then after 16 days of treatment, he was

prescribed with same remedy with higher potencies i.e. 0/3, 0/4 (1oz, 8 dose) in alternate day morning in empty stomach for one month. Due to better improvement, he was advised another one month with higher potencies of Lyco i.e. 0/5 and 0/6. This single medicine was prescribed throughout the period of treatment.

**Table 3:** Plan of treatment

Date of Visit	Main Symptoms	NRS	Prescription
26th Nov .2017	Intense pain in the right loin. Frequent desire for urination. Ineffectual urging to urinate	9	<i>Lycopodium clavatum</i> 0/1,0/2 ( 1oz ,8dose )once a day morning for 16 days.
11th Dec.2017	Pain in the right loin decreased. Frequent desire for urination decreased. Ineffectual urging to urinate decreased	5	<i>Lycopodium clavatum</i> 0/3,0/4 ( 1oz ,8dose) alternate day morning for 32 days
13th Jan .2018	Pain in the right loin decreased significantly. Frequent desire for urination further decreased. Ineffectual urging to urinate further decreased	3	<i>Lycopodium clavatum</i> 0/5,0/6 ( 1oz ,8dose) alternate day morning for 32 days
15 <sup>th</sup> Feb. 2018	No pain in the loin or anywhere in the body. Urination- Normal. Patient comes with stone which was expelled through urine	0	No medicine. He was advised to repeat again USG.
20 <sup>th</sup> Feb.2018	No complain. USG report Normal		

NRS: Numerical Rating Scale score for pain



**Figure 3:** Reportorial totality

### Follow up and outcome

The patient was advised to report at regular intervals. There was significant decrease in pain and other symptoms of the patient after the first prescription, as reported during subsequent visits (Table 3). There was also decrease in NRS score. Within 2 and ½ months, there was complete relief of all the symptoms and ultrasonography showed no stone and no cortical Cyst also (Fig 2(b), Table-4).



Figure 4: Stone expelled after treatment

Table 4: Ultrasound report of whole abdomen after treatment

Report on USG abdomen and Pelvis	
<b>Liver</b>	Normal in size. Supero-inferior axis is 141 mm. (Normal is up to 155 mm). Parenchyma show uniform and homogenous echogenicity. No intra-hepatic biliary duct dilatation could be seen. No SOL could be seen. Normal portal vein, hepatic vein and diaphragm
<b>Gall Bladder</b>	Normal in size. Normal wall. No calculus could be seen.
<b>Common bile duct</b>	Normal and measures 4 mm in caliber. (Normal is 3 to 7 mm.)
<b>Spleen</b>	Normal in size and measures approximately 80 mm. No SOL. SV appears normal.
<b>Pancreas</b>	Normal in size, shape & echogenicity. No calcification. Pancreatic duct is not dilated.
<b>Right kidney</b>	Normal in size. Size of kidney 80mmx37mm. Cortex shows normal echogenicity. Cortico-medullary echo differentiation is well maintained. Collecting systems appear normal. No hydronephrosis or nephrolithiasis could be seen.
<b>Left kidney</b>	Normal in size. Size of kidney 98mmx48mm. Cortex shows normal echogenicity. Cortico-medullary echo differentiation is well maintained. Collecting systems appear normal. No hydronephrosis or nephrolithiasis could be seen.
<b>Ureters</b>	Not visualized (generally not visualized, unless there is hydroureter). Vesico-ureteric junction are normal.
<b>Urinary Bladder</b>	Adequately full. Wall thickness is 2.9mm. Mucosa appears regular. No growth or calculus could be seen. urine volume: prevoid=312cc, post void=22cc (Normal PVR is up to 30cc)
<b>Prostate</b>	Hypertrophied. Size= 37.3mmx47.2mmx34.9mm. Approximately weight is 34.9gms. (BPH grade-II). No nodule could be seen. Parenchyma shows homogenous echogenicity. No calcification could be seen. Outer area appears regular.
<b>No enlarged P.A. lymph node.</b>	
<b>No free fluid collection.</b>	
<b>Impression</b>	<b>BPH grade II &amp; normal PVR.</b> <b>Normal liver, G.B., C.B.D., Pancreas, Spleen &amp; Kidneys</b>

### DISCUSSION

Urinary Stone Diseases (USDs) are also commonly known as urolithiasis, nephrolithiasis, kidney stones, and nephrocalcinosis. USDs are believed to be old as the man kind, and large bladder stones seen in Egyptian mummies, is exemplary evidence. USD is also found to be mentioned in the Hippocratic Oath: "I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work." USD is a common term and is used when the presence of stones and calcification within the urinary tract is observed. It is observed that the majority of stones primarily are formed in the kidneys, albeit the exact mechanisms of stone formation in humans are yet to be identified. Stones can be formed anywhere in the proximal urinary tract in the presence of congenital urogenital abnormalities, urinary obstruction, or infection. The majority fractions of affected population with USD experience only one episode of stone formation, while about 35 % experience recurrence cases at least twice or even more times. Several remedial measures and surgical approaches although have been followed clinically until the 20<sup>th</sup> century, open surgery remained as the first choice of treatment when stones do not pass spontaneously. The approaches for the treatment of USD have been advanced over the last 30 years. For example, without the need for a skin incision, an endoscopic approach for the treatment of

USDs particularly in the case of bladder stone is now advanced. Methodological and technical advancements have been improved for surgical removal of USDs. Improved optic lens systems and fiber optic light sources are used for the clear anatomical observation and it makes better or improvised surgical approaches. Extracorporeal shock wave lithotripsy (SWL) was developed for stone fragmentation without invasive instrumentation of the body. Innovative methods such as ultrasonic stone repositioning, new energy sources, and acoustic lenses are currently being tested<sup>1</sup>. However, all the above procedures to deal with Urinary calculus seem to have physical or surgical approaches. Under surgical approaches, the patients could have faced internal urinary injuries too<sup>5,6</sup>. Recurrence of the diseases, incomplete cure, with side effects and cost effective remedies of the conventional medical science needs an alternative therapy such as homeopathy for treatment of ureterolithiasis. Many homeopathic remedies such as *Hydrangea arborescens*, *Berberis vulgaris*, & *Ocimum canum* and *Lycopodium clavatum* are although well-known medicines for treatment of calculus<sup>7,8</sup>, literature about the later formulation are scanty. The present study therefore was aimed to report the case study for treatment of a 43 years old male patients suffering from ureteric calculus with the homeopathic medicine *Lycopodium clavatum*. Several homeopathic medicines are already proved for their combating effects

on urinary diseases<sup>2,3,7,15-17</sup>. In-vitro studies also suggest it in the case of renal stones<sup>18</sup>. Nonetheless, it is a common belief in the conventional system in medical sciences that stones greater than 7 mm diameter usually need to be removed surgically<sup>17</sup>. In contrast, there are many instances of dissolution and expulsion of bigger stones through homeopathic treatment<sup>19, 20</sup>. These cases were mostly treated successfully with polycrest remedies<sup>9</sup> or medicines selected on the basis of constitutional totalities.

Physiological disorders and diseases may be the outcome of the climatic changes, body mind misbalance or trouble in molecular machines in cells<sup>22-32</sup>. Avoiding the effects of climatic interference, age, metabolic states to contract a disease or physiological disorders irrespective of pathological diagnosis, homeopathic formulations are beneficial in a variety of diseases<sup>33-41</sup>. It is because homeopathy considers an intricate relation among body, mind and organs for speculations of medicines. Considering all into account, the patient with right side pain for Urinary calculus was prescribed with the remedy *Lycopodium clavatum* at potencies of 0/1 to 0/6 for about three months. It was resulted into the removal of the stone at a size of 10 x 4 mm<sup>2</sup> mm directly via urine. *Lycopodium Clavatum*<sup>1</sup> (Wolfs Foot) is one of the pivotal medicines of

the homeopathic material medica: an intimate acquaintance with its properties is essential for proper understanding of the material medica<sup>2</sup>. Similar results with this medicine, where at least 60% patients suffering from Urinary calculosis were found to be successfully cured with *Lycopodium clavatum*<sup>42</sup>.

## CONCLUSION

It is concluded that positive response and restoration of health in a gentle manner within specific time, without any surgical intervention, as observed in the present case study, signifies that the dissolution or expulsion of the stones is possible not only by the well-selected constitutional or individualized treatments. As per the homeopathy literature, *Lycopodium clavatum* has profound action on the ureters and the current case report has justified this. Such randomized control trials on action of *Lycopodium clavatum* on urinary stones are suggested.

## INFORMED CONSENT

Written informed consent was obtained from the patient.

**CONFLICT OF INTEREST:** None declared

## REFERENCES

- Kirkali Z, Rasooly R, Star RA, Rodgers GP. Urinary Stone Disease: Progress, Status, and Needs. *Urology*. 2015 Oct; 86(4):651-3. doi: 10.1016/j.urology.2015.07.006. Epub 2015 Jul 17.
- Sumithran PP. A case of multiple urinary calculi. *Indian J Res Homoeopathy* 2016; 10:142-9.
- Jaiswal K, Nand A, Goswami D, Singh S. Microstructural Analysis of Kidney Stone Expelled During The Homeopathic Treatment – A Case Study. *Int J Dev Res*. 2017; 7(8):14309–14.
- Osorio L, Lima E, Autorino R, Marcelo F. Emergency management of ureteral stones: Recent advances. *Indian J Urol* [Internet]. 2008 Oct [cited 2018 Jan 28]; 24(4):461–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19468497>.
- Rubin JI, Arger PH, Pollack HM, Banner MP, Coleman BG, Mintz MC, et al. Kidney changes after extracorporeal shock wave lithotripsy: CT evaluation. *Radiology* 1987; 162(1):21–4.
- Baumgartner BR, Dickey KW, Ambrose SS, Walton KN, Nelson RC, Bernardino ME. Kidney changes after extracorporeal shock wave lithotripsy: appearance on MR imaging. *Radiology* 1987; 163(2):531–4.
- Raut M, Malokar K, Jagose AT. Case Report Homeopathic Management of Kidney Stones : A Comprehensive Review. *J Med Pharm Innov*. 2017; 4(20): 53-58.
- Boericke O. Pocket Manual of Homeopathic Materia Medica With Repertory. New Delhi. B. Jain Publishers; 1996.
- Siddiqui VA., Singh Hari, Gupta Jaya, Nayak C., Singh Vikram, Sinha MN. et. al. A multicentre observational study to ascertain the role of homeopathic therapy in Urolithiasis. *Indian J Res Homoeopathy*. 2011; 5(2):30-39.
- Mittelstadt Uta. A Critical Analysis of Organopathy in Diagnosis and Practice. *Hopathy Ezine*, August 13, 2010 <https://hopathy.com/homeopathy-papers/a-critical-analysis-of-organopathy-in-diagnosis-and-practice/>
- Burnett JC. The Diseases of Liver. New Delhi: B.Jain Publishers; 2003.
- Hahnemann S. Organon of Medicine. Trans. Dudgeon RE. 5th ed. New Delhi. B. Jain Publishers; 2011.
- Close S. The Genius of Homeopathy. New Delhi. Indian Books & Periodicals Publishers; 2005.
- Clarke JH. A Dictionary of Practical Materia Medica. Vol. 1. New Delhi. B. Jain Publishers Pvt. Ltd. 2005.
- Nayak C, Hati AK, Dash SK, Paital B. Benign Prostatic Hyperplasia and Homeopathic Treatment: Case Study of a 64 Years Old Patient. *Indo American Journal of Pharmaceutical Sciences* 2017; 04(12):4695–4703.
- Nayak C, Hati AK, Dash SK, Paital B. A Case Report On Benign Prostatic Hyperplasia With Homeopathic Remedies. *Indo American Journal of Pharmaceutical Sciences* 2017; 04(11):4398–4403.
- Gupta AK, Gupta J, Siddiqui VA, Mishra A. Case Record A big urinary calculus expelled with homeopathic medicine. *Indian J Res Homoeopath*. 2008; 2(4):50-55.
- Ganesan T, Ravi DB, Vasavan J, Khurana A, Nayak D, Periandavan K. Homeopathic preparation of *Berberis vulgaris* as an inhibitor of Calcium oxalate crystallization: An in vitro evidence. *Indian J Res Homoeopathy* [Internet] 2015 [cited 2018 Jan 30]; 9:152-7. Available from: <http://www.ijrh.org/text.asp?2015/9/3/152/166374>.
- Chakma A. Renal Calculi: An evidence Based Case Study. *Int J Med Allied Heal Sci*. 2015; 7(1):5–9.
- Sharma S, Wadhvani GG. Experience with homeopathy in a case of large urethral calculus. *Indian J Res Homoeopathy* 2013; 7:176-80
- Hesse A, Tiselius HG., Siener Roswitha, Hoppe Bernd. Urinary stones: diagnosis, treatment, and prevention of recurrence. Bangalore: Karger; 2009.
- Ganapathy T. Iswariya, Biswaranjan Paital, Palghat R. Padma, Ramalingam Nirmaladevi. 2018. Cross talk between cancer and aging via miRNAs, as target for anticancer therapy. *Anti-Cancer Agents in Medicinal Chemistry*. Accepted
- Paital B. 2018. Nutraceutical values of fish demand their ecological genetic studies: A short review. *Journal of Basic and Applied Zoology*. 2018; 79(16):1-11. DOI: 10.1186/s41936-018-0030-x
- Paital B. Redox Regulation in Animals to Slow Down Ageing. *J. Biores. Comm*. 2017; 1(1):1-2.
- Paital B, Jahan T, Priyadarshini S, Mohanty A. Antioxidants and Ageing. *Open Journal of Environmental Biology*. 2017; 2(1):021 – 022.
- Paital B, Rivera-Ingraham, GA. High speed urbanization and its effects on aquatic food chain especially on fish in Bata river of Odisha, India. *J Fish Sci.com*. 2016; 10(4):1-3
- Paital B. 2016. RE: 2016 Science News at Glance. *Science*. 352, (6290), 1-2. IF-41.058. ISSN: 1095-9203. UGC List 33438. <http://science.sciencemag.org/content/352/6290/1148/tab-e-letters>
- Paital B. Mass spectrophotometry: an advanced technique in biomedical sciences. *Adv Tech Biol Med*. 2016; 4(182):1-8. doi: 10.4172/2379-1764.1000182. . IF-00.00. Citation:02.

29. Paital B. RE: Full speed ahead to the city on the hill. Science. 2016; 352(6288):1-2. IF-41.058. ISSN: 1095-9203, UGC List 33438  
<http://science.sciencemag.org/content/352/6288/886/table-letters>
30. Radinnurafiqah M, Paital B, Kumar S, Abubaker S, Tripathy S. AgNO<sub>3</sub> dependant modulation of glucose mediated respiration kinetics in Escherichia coli at different pH and temperature. J Mol Recog. 2016; 29(11):544-554. DOI: 10.1002/jmr.2554
31. Paital B. Oxidative stress and ageing in animals under thermal stress due to global warming: A perspective. Res J Biol. 2016; 4(1):4-8.
32. Paital B, Panda SK, Hati AK, Mohanty B, Mohapatra MK, Kanungo S, Chainy GBN. Longevity of animals under reactive oxygen species stress and disease susceptibility due to global warming. World J Biol Chem (ISSN: 1949-8454) 2016; 7(1):110-127. doi.org/10.4331/wjbc.v7.i1.110. Citation: 12. IF-00.00
33. Sahoo AR, Barik BB, Hati AK, Paital B. 2018. RIGHT POTENCY MATTERS- A CASE REPORT OF HOMOEOPATHIC TREATMENT OF VERRUCA PALMARIS. Homeopathic Links. Accepted
34. Sahoo AR, Nayak C, Hati AK, Rath S, Paital B. A review on research evidences in homoeopathy for urinary tract infections. W. J. Pharm. Res. 2018; 7(13):185-200. DOI: 10.20959/wjpr201813-12679
35. Nayak Chintamani, Sahoo Amulya Kumar, Nayak Chaturbhuj, Prusti Umakanta, Hati Akshaya Kumar, Paital Biswaranjan. A case report of ureteric calculus treated with homoeopathic medicine, *Hydrangea arborescens* 30. Indo Am J Pharm Sc. 2018; 05 (01):627-633. doi.org/10.5281/zenodo.1165287 UGC J No. 48603.
36. Misra Alok, Nayak Chaturbhuj, Paital B. *Carcinosin*, a boon for pediatric nephrolithiasis: case reports. W J Pharm Res. 2018; 7(3):922-931. UGC Journal no. 47332. Sl. No. 540. DOI:10.20959/wjpr20183-10870
37. Hati AK, Paital B, Sahoo AR, Shankar U. A case study for successful treatment of vitiligo with a constitutional homoeopathic formulation *Calcarea carbonica*. Indo Am J Pharm Sci. 2018; 05(01):299-303. doi.org/10.5281/zenodo.1149335
38. Sahoo AR, Paital B, Taneja D, Hati A.K. Knowledge, Attitude and Practice of Anganwadi Workers on Homoeopathic Formulations. Indo American J Pharmaceutical Res. 2017; 7(10):574-581.
39. Paital B, Hati AK, Nayak C, Mishra AK, and Nanda LK. Combined Effects of Constitutional and Organopathic Homeopathic Medicines for Better Improvement of Benign Prostatic Hyperplasia Cases. International Journal of Clinical & Medical Images 2017; 4(7):1-2. doi: 10.4172/2376-0249.1000574
40. Paital B, Hati AK, Naik KN, Mishra AK, Nanda LK, Chainy GBN. Re: Editorial Comment on Constitutional, Organopathic and Combined Homeopathic Treatment of Benign Prostatic Hypertrophy: A Clinical Trial: S. A. Kaplan J Urol 2013; 190:1818-1819. J. Urol. (ISSN: 0022-5347), 193, 1-2. doi.org/10.1016/j.juro.2014.04.088
41. Hati AK, Paital B, Naik KN, Mishra AK, Chainy GBN, Nanda LK. Constitutional, organopathic and combined homeopathic treatment of benign prostatic hypertrophy: a clinical trial. Homeopathy, 2012; 101:217-223. doi:10.1016/j.homp.2012.08.005.
42. Reddy SR. Effect of homoeopathic medicine *Lycopodium clavatum* in urinary calculi. International Journal of Applied Research 2017; 3(1):790-791

