International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 6 Issue 7, November-December 2022 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Therapeutic Utility of Berberis Vulgaris on Urolithiasis and its Complications

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ABSTRACT

The formation of stony concretions (calculi) in the body, most often occurs in the gall bladder or urinary system. Urolithiasis occurs more frequently in men than in women and in whites than in blacks. It is rare in children. It shows a familial predisposition. It is a stone-like body composed of urinary salts bound together by a colloid matrix of organic materials. It consists of a nucleus around which concentric layers of urinary salts are deposited. It occurs due to various factors like hyper excretion, changes in urine, urinary infection or stasis, etc.

Renal calculi is a global disease increase in prevalence of renal calculi is seen due to westernization of life style habit (E.g. Dietary changes, increase body mass index). Nephrolithiasis is common worldwide; this is the 3rd commonest disorder of the urinary tract, after UTI & prostatic hyperplasia. It is more common in male than in female. The incidence is highest in middle age, white men.

There are major usages of Berberis Vulgaris medicine in such conditions as well as for its complications.

KEYWORDS: *Urolithiasis, Calculi, Urine, Berberis Vulgaris, Complications*

How to cite this paper: Dr. Viren D. Nimbark "Therapeutic Utility of Berberis Vulgaris on Urolithiasis and its Complications" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-7, December 2022, pp.676-679, URL: www.ijtsrd.com/papers/ijtsrd52395.pdf

IJTSRD52395

INTRODUCTION

Renal stone or calculus or lithiasis is one of the most common diseases of the urinary tract.

Lithiasis: the formation of stony concretions (calculi) in the body, most often in the gall bladder or urinary system.

It occurs more frequently in men than in women and in whites than in blacks. It is rare in children. It shows a familial predisposition.

Urinary calculus is a stone-like body composed of urinary salts bound together by a colloid matrix of organic materials. It consists of a nucleus around which concentric layers of urinary salts are deposited.

In some cases, the stones are very small and can pass out of the body without any problem. If a stone blocks the flow of urine. It produces sudden pricking pain at the location of that stone. There are also increased chances of renal infection- Pyonephritis / Pylonephritis, Hydronephritis, Cystitis, and many other complications may arise according to the size and type of calculus.

Etiology:

Gout – result in a chronically increased amount of uric acid in the blood and urine and can lead to the formation of uric acid stones.

Hypercalciuria- High in calcium in the urine, another inherited condition that causes stones in more than half of cases, too much calcium is absorbed from food and excreted into the urine, where it may form calcium phosphate or calcium oxalate stones.

Other conditions – Include Hyperparathyroidism, kidney disease such as renal tubular acidosis, and other inherited metabolic conditions, including cystinuria and hyperoxaluria.

Chronic diseases- Such as diabetes and high blood pressure.

People with inflammatory bowel disease

Intestinal bypass or ostomy surgery

Some medications - Including diuretics, calcium-containing antacids and protease inhibitors like indinavir is a drug used to treat HIV infection.

Dietary factors- Particularly inadequate fluid intake predispose to dehydration, which is the major risk factor of renal stone, other causes are high intake of animal protein, a high salt diet, excessive sugar consumption, excessive vita D supplement, and excessive intake of oxalate containing food such as spinach.

There are following three major types of renal stone according to content:

- Primary Renal stone
- Secondary Renal stone
- Mixed Renal stone

1. Primary Renal Stone is formed directly from healthy excretory conditions without any underneath pathological condition. There are four types of it. A. Calcium oxalate stone, B. Uric acid stones, C. Crystalline stones, and D. Xanthine stones.

Calcium oxalate:
It is the most common type of renal stone.

Appearance – Single and very hard stone

Surface- Irregular, rough, and spiky

Colour- brown dark

X-ray – Radio opaque

Risk factors

Hyper calciuria

Hyper calcemia

Hyperoxaluria

Uric Acid Stones:
It occurs in around 8% of patients suffering from acidic urine.

Appearance: Multiple hard stones

Surface: Smooth and granular

Colour: brownish-white

X-ray: Radio opaque

Risk factors: Gout

Crystalline stones:
It occurs in almost the least number of patients around 1%.

Appearance: Hexagonal and benzene ring

Multiple and soft sulphur containing

Colour: Yellow

X-ray: Poor radio-opaque

Risk factors: Cystinuria

Xanthine stones:
Extremely rare stone

Appearance: Multiple, soft, wax-like

Surface: Smooth and round

X-ray: Radiolucent

Risk factors: Deficiency of xanthine oxidase enzyme

2. Secondary Stone:
They are formed in diseases of the urinary tract and formed in alkaline urine.

Phosphate stone/struvite stone

Composition- cl+NH3+mgso4(triple phosphate stones)

Surface – Smooth and dendrite

Colour- Dirty white

X-ray- Radio opaque

Risk factors- Infection, mostly female UTI

- Mixed stones are composed of more than one type of content.

CLINICAL FEATURES.—
SYMPTOMS — Renal stones can be divided into 4 clinical types:—

1. Quiescent calculus: - the phosphate stones, may lie dormant for quite a long period during this time the stones gradually increase in size with the destruction of the renal parenchyma.
2. Pain: - there are the following different types of pain that could occur according to the location of the renal stone.

A. Fixed renal pain: The pain is situated in the renal angle posteriorly and in the corresponding hypochondria anteriorly.
B. Ureteric colic: radiation of the colicky pain is due to reflex pain which takes place along the course of the iliohypogastric and ilioinguinal nerves which are the somatic nerves of the same segments which supply the autonomic nervous system to the ureter.
C. Referred pain: rare and is sometimes referred to all over the abdomen.

3. Hydronephrosis: - patient complains of a lump in the loin and a dull ache.
4. Haematuria: - usually occurs in a small amount to make the urine dirty or smoky during or after an attack of pain.

SIGNS:-

1. Tenderness. — This is mostly present at the 'renal angle' posteriorly. This angle is between the lower border of the 12th rib and the lateral border of the erector spine muscles. Anteriorly such tenderness may be elicited about an inch below and medial to the tip of the 9th costal cartilage, which is known as the renal point.

2. Muscle rigidity over the kidney may be found in a few cases. Rebound tenderness anteriorly can also be elicited, particularly if an acute infection is associated.
3. Swelling. — in the case of Hydronephrosis or Pyonephrosis associated with renal calculus, swelling may be felt in the flank.

The characteristics of a renal swelling are as follows:—

A. It is oval or round in shape.
B. The swelling is almost fixed and cannot be moved as it is a retroperitoneal swelling.
C. A kidney lump is ballot able.
D. The swelling slightly moves up and down with respiration, but much less than a liver swelling.
E. Fingers can be insinuated between the lump and the costal margin (which is not possible in splenic or liver swelling).
F. A band of resonance can be elicited anteriorly on percussion, due to the presence of colon, duodenum, and coils of the small intestine in front of the kidney according to the side (but such resonance is absent in splenic and liver swellings).
4. Abdominal distension and diminished peristalsis may accompany ureteric colic.

Laboratory examination:
Microscopic examination- of urine, which may show red blood cells, bacteria, leucocytes, urinary cast, crystals.

Urine culture- to identify any infecting organism present in the urinary tract.

Complete blood count- looking for neutrophilia (increased neutrophils granulocyte) suggestive of bacterial infection. As seen in struvite stones.

RFT- Renal function test is required for abnormality in high blood calcium.

Collection of stones- (by urinating through a stone screen kidney stone collection cup or a simple tea strainer) is useful.

Chemical analysis of collected stones can establish their composition, which is helping to guide future preventive and therapeutic management.

SPECIAL INVESTIGATIONS.—
1. Blood examination. Mostly normal but requires assessment RFT by estimating blood urea, N.P.N., and creatinine.
2. Urinalysis. Renal function tests should always be performed in calculus cases.
3. Radiography.

STRAIGHT X-RAY.— KUB region (both kidneys, ureters, and bladder)

EXCRETORY UROGRAM

Ultrasonography

Computed tomography

Renal Scan
4. Instrumental examination.
5. Examination of the stone.

Therapeutic utility of Berberis Vulgaris

About Homoeopathy:
Homoeopathy treats the person as a whole. That means Homoeopathic treatment focuses on the patient as a person, as well as his pathological conditions.

The homoeopathic medicines are selected after a full individualizing, examination, and case analysis which include the medical history of the patient, physical and mental constitution.

A miasmatic tendency is also often played an important role in the choice of remedy for a chronic condition.

The symptoms listed against each medicine may not be directly related to this disease because in Homoeopathy general symptoms and constitutional indication are also taken into account for selecting a remedy.

Berberis Vulgaris:
The medicinal plants from genus Berberis are particularly important in traditional medicine and the food basket of Iranians.

Medicinal plants have been known among different nations since thousands of years ago and have been used throughout many centuries according to the traditional medicine of most countries. In recent decades and despite the emergence of synthetic drugs, medicinal plants continue to be welcomed and are being used in many countries due to safe use, efficiency, cultural acceptance, and fewer side effects than synthetic drugs.

Genus Berberis is native to moderate and semitropical regions of Asia, Europe, Africa, North America, and South America. Different plants of genus Berberis can occur in many regions across the world including Iran.

Apart from its traditional uses, it is an important remedy for neuralgic pain of the body but especially the joints and muscles. It is also useful for colic of hepatobiliary origin. Berberis Vulgaris is indicated for Urolithiasis and calculus occurred from it. It is indicated when mucous membranes tend to be dry and saliva thick and sticky. There are sharp twinging,

stitching, shooting or radiating pains caused by cystitis and kidney stones. Such pains are rapidly recovered with Berberis Vulgaris. It enables the passage of kidney stones with much-reduced colic.

The renal or vesical symptoms in Berberis Vulgaris are very predominant.

There is a pain in small of back; very sensitive to touch in renal region; < when sitting and lying, from jar, from fatigue. Numbness, stiffness, lameness with painful pressure in renal and lumbar regions.

The patient has a pale, earthy complexion, with sunken cheeks and hollow, blue-encircled eyes.

Rheumatic and gouty complaints, with diseases of the urinary organs.

Stitching, cutting pain from left kidney following a course of the ureter into bladder and urethra (Tababacum, - right kidney, Lycopodium).

Renal colic. < left side (Tab. - either side), with urging and strangury. (Cantharides).

Rubbing sensation in kidneys (Medorrhinum).

Urine: greenish, blood-red, with thick, slimy mucus; transparent, reddish, or jelly-like sediment. Movement brings on or increases urinary complaints.

Pain Radiate from a point. Cannot make the least motion, sits over the painful side to relieve pain.

Sharp, darting, pains the following ureter and extending down legs.

Pain runs up to the kidneys and down to the bladder.

The formation of a little stone-like pin-head in the pelvis of the kidney starts to go down to the bladder with great suffering.

"You will be astonished to know how quickly Berberis will relieve this particular colic." "anything that is spasmodic can be relieved instantly"- Dr. James T. Kent

Burning and soreness in the kidney region.

Cannot bear any jar, has to step down carefully.

Urine- dark, turbid, with copious sediment. Slow to flow but constantly urging may be associated with biliary calculi.