



ORIGINAL RESEARCH PAPER

Surgery

EFFECT OF VITAMIN B12 AND FOLIC ACID ON CHOLESTEROL

KEY WORDS: Renal calculus, stone expulsion.

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ABSTRACT

We hereby present a case series of 122 patients of renal calculi who were subjected to allopathic and herbal medicines for non surgical treatment for the same. This is a comparative observational study, comparing the efficacy of allopathic drugs with herbal medicines in terms of patient compliance, expulsion of stone and episodes of colicky pains. Results which we obtained for both pathies were comparable, however owing to longer duration of treatment in herbal medicines, compliance rate was less compared to allopathic medicines. Surgery was the last option in the treatment of these patients in whom there was no expulsion of stone.

Introduction

Urolithiasis is defined as the condition in which a single calculus or multiple calculi may be formed anywhere in the urinary tract. The problem of urinary stone or calculi is a very ancient one. The first evidence of urinary stone was found in an Egyptian mummy at El Amrah, Egypt in 4800 B. B. Even in the 4th century B. C. Hippocrates noted the presence of renal stone together with renal abscess and has mentioned in his oath, "I will not cut, even for stone, but leave such procedures to practitioners of the craft."

Urolithiasis is classified by the location in the kidney (nephrolithiasis), ureter (ureterolithiasis), bladder (cystolithiasis), or by their chemical composition (such as calcium oxalate stones, calcium phosphate stones, uric acid stones, triple phosphate stones, urate stones, cystine stones, xanthine stones, indigo stones, struvite stones).

Today a large number of people suffer from various kinds of kidney ailments. Although urolithiasis is seen in any age group, young and middle aged individuals mostly between 20 to 40 years are most common sufferers. Stone disease has gained increasing significance due to changes in living conditions that is industrialisation and malnutrition. A direct link exists between regions of technological sophistication and affluence and the high incidence of urinary stones. Familiar associations to occur and multiple recurrence are similarly more common where are positive family history exists. Once a stone passes spontaneously or is removed there is a better than 50% chance of its recurring within the following decade. Nephrolithiasis is more common in males than females and majority of them are radioopaque. With the prevalence of more than 10% and and expected recurrence rate of almost 50%, stone diseases have significant impact on health care system. In India approximately 5-7 million patient suffer from stone diseases and at least one in thousand of Indian population needs hospitalization due to kidney stone disease. In India, the 'stone-belt' occupies parts of Maharashtra, Gujarat, Punjab, Haryana, Delhi and Rajasthan. The Dhule region of North Maharashtra is enlisted among the names of those regions which constitutes the urolithiatic belt of Maharashtra. The cause of urolithiasis in this province is mainly the high mineral content of the drinking water and Elliot hot climate of the region.

Urolithiasis, especially ureterolithiasis can give rise to episodes of very high intensity colicky pain. The treatment of urolithiasis depends on size, location and back pressure effects on the urinary system. Fortunately, 80% of stones in the range of size < 7 mm to 8 mm passout spontaneously and can be treated medically. Bigger stones may require operative management for which many surgical techniques are available nowadays such as extracorporeal

wave lithotripsy (ESWL), percutaneous nephrolithotripsy (PCNL), ureteroscopic stone removal, pyelolithotomy, nephrolithotomy, partial nephrectomy, coagulum pyelolithotomy, anatomic pyelolithotomy, ureterolithotomy, bench surgery. The conventional allopathic medicines used in the treatment of urolithiasis have adverse effects with their chronic usage. Therefore, nowadays, the trend of treating patients of urolithiasis with Ayurvedic herbal medicines has been rising owing to their equivalent efficacy and low profile of adverse effects.

India is the largest producer of medicinal and aromatic plants and as such is known as the 'botanical garden of the world'. India is the world's 12th mega diverse region with 47,000 plant species and is divided into 20 agro-eco. A distinguished formulation mentioned by Sushruta for management of Mutraashma (urolith) is 'Pashambhedadighrita' which is in clinical usage centuries. Nowadays the Ayurvedic preparations employed for treatment of urolithiasis are Gokshuradi Gugugul, Gokhru Kadha, Chandraprabhavati etc. The following observational study and research aims at putting forth the statistics of success rates in patients treated with allopathic and ayurvedic herbal medicines, thereby aiding in drawing conclusions regarding the efficacy of one group over the other.

Aims and objectives

1. To evaluate compare and contrast between the clinical effects of allopathic and ayurvedic herbal medications used in the treatment of nephrolithiasis and ureterolithiasis.
2. To evaluate compare and contrast between the adverse effect profiles of allopathic and ayurvedic herbal medications used in treatment of nephrolithiasis and urolithiasis.
3. To record and study patient compliance with respect to the uses of two pathies in the treatment of aforementioned clinical conditions.

Methodology

The observational study was conducted in the Dhule district of North Maharashtra. The prior permission for conducting the study was obtained from institutional ethics committee. Patients of nephrolithiasis and ureterolithiasis satisfying the inclusion and exclusion criteria were included in this study after obtaining informed consent from them. Population of either sex in the age group of 18 to 65 years was included in our study. All patients were thoroughly investigated along with radiology and sonography, Patients were selected from the OPD of our Medical College and 122 patients were included in our study. This longitudinal study included patients satisfying the aforementioned criteria and were categorised randomly either into Group I are Group II. Group I consisted of patients who were put on allopathic medications

under the supervision and guidance of a registered authorised allopathic clinician, while group II consisted of patients put on Ayurvedic medications under the supervision and guidance of a registered authorised ayurvedic clinician. Patient categorised into Group-I and Group-II were further categorised into 3 groups, namely group-A, group-B and Group-C based on the size of the stone measured through imaging modalities such as x-ray KUB or USG.

Thus every patient participating in the study was classified and categorised as follows

Table 1 – Classification of patients in our study

Categorisation	Group A	Group B	Group C
Group I	I - A	I - B	I - C
Group II	II - A	II - B	II - C

- i. **Subcategory I-A** - patients with stone size less than 5 mm treated with allopathic medicines
- ii. **Sub category I-B** - patients with stone size between 5 mm to 6 mm treated with allopathic medicines
- iii. **Sub category I-C** - patients with stone size between 6 mm to 7 mm treated with allopathic medicines.
- iv. **Subcategory II-A** - patients with stones and less than 5 mm treated with herbal medicines
- v. **Subcategory II-B** - patients with stone size between 5 mm to 6 mm treated with herbal medicines
- vi. **Subcategory II-C** - patients with stone size between 6 mm and 7 mm treated with herbal medicines

Thus, we had in all 6 sub categories and observations were recorded separately for each subcategory. The patients based on the random sub-categorisations, were treated according to the pathy of respective subcategories and kept under observation for a total period of 4 months. The patients were called back regularly at an interval of every 15 days and thoroughly investigating with USG and/or X-rays so as to keep record of progression of the stone along the urinary tract.

The list of medicines included in the 2 pathies were as follows –

Table 2 – Pathies used

Allopathic medicines		Herbal medicines	
1.	Hydrochlorothiazide 12.5 mg O.D. (Diuretic)	1.	Gokshuraadi Guggul – 2 tablets T.D.S. (diuretic, ureteric muscle relaxant)
2.	Potassium Chloride 5mg B.D.	2.	Gokhru Kadha 2 teaspoon Q.D.S. (Diuretic)
3.	Antispasmodic SOS	3.	Chandraprabha Vati - 1 tablet B.D. (Analgesic)

The observation was recorded for all 3 groups made on the basis of stone-size as mentioned above and statistics for each subcategory were calculated separately and compared with each other.

Results

Out of 122 patients, there were 72 males and 50 females (male:female ratio was 1.4:1). Both modalities of treatment showed a comparable expulsion rate, about 91 percent in allopathic medicines and 89 percent with herbal medicines. Incidence or episodes of colics was more in allopathic medicines as compared to herbal medicines. However compliance was more to allopathic medicines as compared to herbal medicines.

Conclusion

From above calculations, we found that the expulsion results were comparable in both pathies, but the compliance was better with Allopathic treatment. Surgery was of course the last option if there was no response to medicinal treatment.

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