

# Survey on knowledge, attitudes and practices on urolithiasis among final year students in Faculty of Medicine, University of Peradeniya.

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**Abstract** –Urolithiasis is one of the major problems in urology practice. The health care providers' knowledge, attitudes and practices are important factors causing delay in treatments. The objective of this study was to determine knowledge, attitudes and practices regarding urinary tract stones among final year medical students. This study was a descriptive cross sectional study conducted over a period of six months with 102 students within the age range of 22 to 28 years. The mean age was  $25.21 \pm 1.04$  years and mean knowledge score was 72.72%. Out of the sample 55.55% had positive attitudes towards the urolithiasis. There were 90.12% (n= 92) of them recommended to drink more than 2 liters of water instead of other liquids for patients who suffered from kidney stone disease. Out of the sample 83.35% (n=85) participants agreed to advice to avoid highCa containing foods. Therefore the knowledge and practices of medical students towards urolithiasis was good and attitudes were poor.

**Index items** - urolithiasis, knowledge, attitudes and practices.

## I. INTRODUCTION

Urolithiasis is one of the major problems in urology.<sup>(1)</sup> The presence of a solid material in the urinary tract, normally devoted to the passage of urine is termed 'nephrolithiasis' or 'renal stone disease'. The solid bodies formed in the urinary tract are termed 'stones'.<sup>(2)</sup> The main symptom of a kidney stone disease is an extreme pain in the back (which begins when a moving stone blocks the urethra), nausea and vomiting can also accompany the pain.<sup>(3)</sup> There are several risk factors associated with the development of kidney stone disease such as genetic factors, age, gender, climate, Body Mass Index (BMI), weight, water intake, co-morbidities, occupation and diet.<sup>(4)</sup> The epidemiology of urolithiasis differs according to the geographical area in terms of prevalence and incidence, age and sex distribution, stone composition and stone location. Urolithiasis is twice more common in males than in females.<sup>(8)</sup> Usually the first episode of renal stone occurs commonly in young people (20-40 years)<sup>(9)</sup> and peak incidence is reported in second or third decades of life.<sup>(10)</sup> As it mostly affects working age group, it is a major socioeconomic burden for the society.<sup>(11)</sup> Ureteric stones contribute 20% of all urinary tract stones and 70% of which are located in the distal ureter.<sup>(12)</sup>

Urinary tract stones affect up to 2-5% of the Asian population<sup>(5)</sup> and up to 15% of population in the western countries.<sup>(6)</sup> Although such data is not available for Sri Lanka, the fact that nearly 3000 patients are treated with extra-corporeal shock wave lithotripsy (ESWL) at the National Hospital of Sri Lanka alone every year is an indirect indicator of the size of the problem.<sup>(7)</sup> There were several studies done to assess knowledge and attitude of urinary tract stones among primary care physicians and medical students.<sup>(13)</sup> A study conducted in 2008 in New York to see deficits in urological knowledge among medical students and primary care providers. It revealed that the general urological knowledge with regard to primary care setting was insufficient.<sup>(14)</sup>

The health care providers' knowledge, attitudes and practices are important factors causing delay in treatments. Therefore it is important to assess future health care providers' knowledge, attitudes and practices of urinary tract stones before planning health care education programs later on. The objective of this study was to determine knowledge, attitudes and practices regarding urinary tract stones among final year medical students, Faculty of Medicine, University of Peradeniya.

## II.METHODOLOGY

This study used the descriptive cross sectional design with an analytical component. The final year medical students were the study population. There were 102 students selected by simple random sampling technique. The study was based on a closed ended self-administered questionnaire. The test-retest reliability was measured in a pilot study of 20 participants before data collection. The questionnaire composed of five parts.

The first part collected demographic data of the participants and their exposure to surgical appointments. The second part was to assess the level of knowledge regarding urolithiasis. There were 17 questions prepared to assess the knowledge on urolithiasis. The questions were to assess knowledge on food habits, type and amount of liquid intake, risk factors, symptoms of stone disease, methods of laboratory investigations and stone disease associated occupations. The correct responses were scored as "1" incorrect and "don't know" responses were scored as "0." An overall knowledge score was calculated by summing the scores for the statements. Thus, the highest possible score is 36. Then mean percentage score was calculated. The third part concerns attitudes towards urolithiasis. Nine attitude statements that used a five-point Likert scale to evaluate the participants' attitudes toward beliefs about urolithiasis and its social consequences. Likert scale was used to scale the attitudes, the respondent was not asked to decide just whether he or she agreed or disagreed with the statement, but rather to choose between several response categories indicating the various degrees of agreement or disagreements. The statements were assigned a score and the respondent's attitudes were measured by his or her total score, which was the sum of the scores for each of the statement. The fourth part concerned various practices of urolithiasis. There were some additional questions to gain more information for health education.

## III.RESULTS

A total of 102 participants with in the age range of 22 to 28 years were included in this analysis. The mean age was  $25.21 \pm 1.041$  years. Out of the sample 50.98% (n=52) were males and 49.02% (n=50) were females.

The results showed that the mean knowledge score was  $26.18 \pm 3.13$  out of 36.00. None of the participants scored 0 and none of the participants had the maximum score. Out of the sample 100% (n=102) had seen a patient with urolithiasis. Also 72.55% (n=74) had known that farmers and manual laborers are associated with stone disease. Only 23.53% (n=24) had known that managers are also under the risk of urolithiasis. However, most of them 73.53% (n=75) believed that hard water causes urinary tract stones. Out of the sample 71.57% (n=73) were aware regarding food habits and stone formation and 85.30% (n=87) thought that it runs through families and 74.51% (n=76) believed that stress is a precipitating factor for stone formation.

Their knowledge on risk factors of urolithiasis was poor. Only 20.58% (n=21) had a clear idea of risk factors such as family history, obesity, medullary sponge kidney and gastric bypass. However they were familiar with the symptoms of stone disease and 96.08% (n=98) had better knowledge about symptoms. Also 46.08% (n=47) had an idea of the first line laboratory investigations in a patient with ureteric colic. Out of the sample 75.49% (n=77) were aware with the first drug for pain relief in patients with ureteric colic. Only 66.66% (n=68) had an idea of the drugs which use in Medical Expulsion therapy. Regarding consultation for stone disease, 88.23% (n=90) believed that urologists can give the best treatment for stone disease and 8.82% (n=9) preferred surgeon and 2.94% (n=3) preferred nephrologist for treatments.

Regarding attitudes,

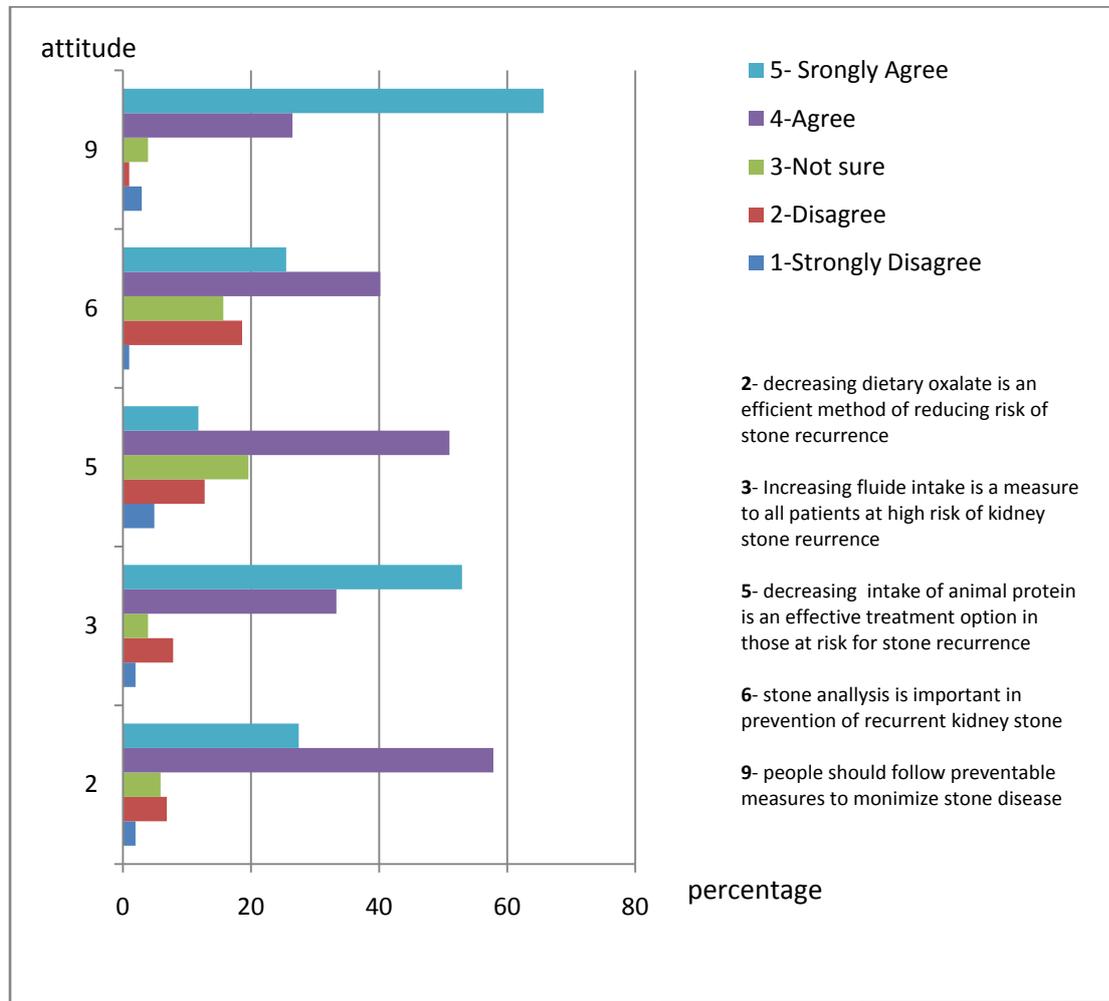


Figure 01- Percentages of positive attitudes of the study sample regarding urinary tract stones

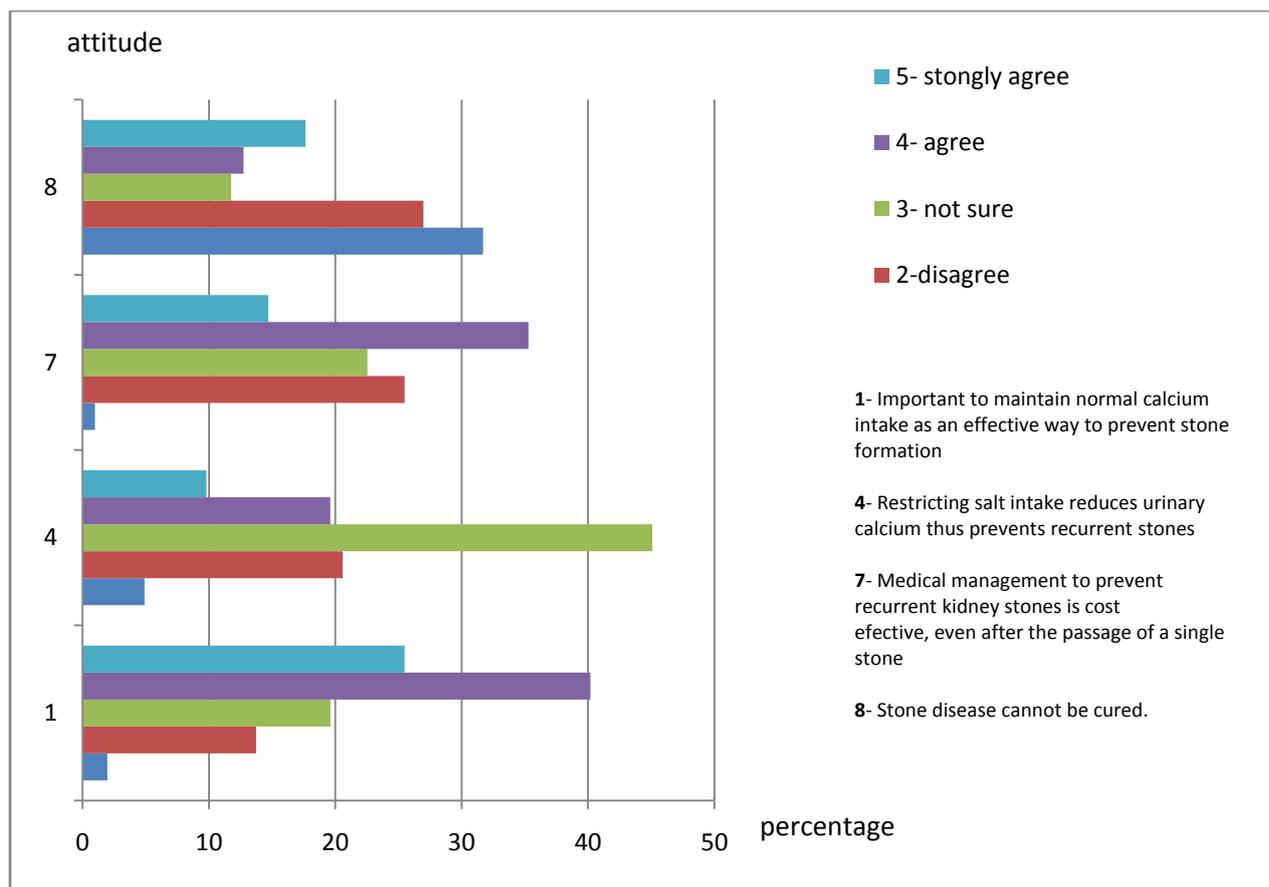


Figure 02- Percentages of negative attitudes of the study sample regarding urinary tract stones

Regarding practice,

90.12% (n= 92) recommended to drink more than 2 liters of water instead of other liquids for patients who suffered from kidney stone disease. Out of the sample 83.35% (n=85) participants agreed to advice to avoid high Ca containing food like sprats, milk and cheese and also to eat more sour sap ('katuanoda').

#### 1V. DISCUSSION

This study was designed to collect information regarding knowledge, attitudes and practices of urolithiasis inmedical students. Though it is not possible to find out a published survey on knowledge, attitudes and practices of urolithiasis in medical studentsdirectly, there are some studies from which we can have an idea aboutgeneral populations' knowledge and attitude about urolithiasis.

According to one of the study ,140 patients who had treated by lithotripsy in Armenia, found that mean knowledge score was 15.6 out of 19 (82.1%) and the mean practice score for participants was 9.1 out of 19 (47.8%).<sup>(4)</sup>The study showed that despite respondents' sufficient knowledge about kidney stone disease prevention they did not practice protective behavior. Another study was done among 68 health care workers on knowledge, attitudes and practice on prevention of recurrent kidney stones revealed that 70% of respondents were aware the current guidelines and 43% of respondents utilized their knowledge in clinical practice.<sup>(10)</sup>

Results of this study indicate that the knowledge of the medical students regarding urolithiasis is much better. They have better knowledge on type of occupations which associate with urinary tract stones, food habits, and amount of water intake, family risk, symptoms and pain relief drugs. But their knowledge on risk factors, laboratory investigations of urolithiasis and drugs use in medical expulsion therapy seems to be poor. Most of the participants 88.23% (n=90) selected Urologist to take treatment for urolithiasis but some of them preferred surgeon and Nephrologist. Urologists are the doctors specialized in the management of urolithiasis, but some of the participants in our study population did not see any difference between urologist and nephrologist with regard to the management of urinary tract stones.

Attitudes regarding urolithiasis was poor than their knowledge. Only 19.60% (n=20) of participants had positive attitudes towards the statement of “restricting salt intake reduces urinary calcium thus prevents recurrent stones” and 40.19% (n=41) believed that stone analysis is important in prevention of recurrent kidney stones. Out of the sample 35.29% (n=36) agreed with the statement of the “medical management to prevent recurrent kidney stones is cost effective, even after the passage of a single stone”. But Most of the participants more than 50% have positive attitudes with the statements of “decreasing dietary oxalate is an efficient method of reducing risk of stone recurrence”, “increasing fluid intake is a measure to promote for all patients who are at high risk of kidney stone recurrence” and “preventable measures can be minimize stone disease”

In a research which was done among 100 patients who referred for active stone removal in Sweden, showed positive attitudes on prevention of recurrent kidney stones.<sup>(9)</sup> In Hong Kong, a research has done to evaluate awareness of prevention strategies on renal stones and found to have that public and the stone patients in the city have little knowledge and awareness.<sup>(10)</sup> According to our study, the knowledge score and their practice score was comparatively high. It suggested that there was a connection between the knowledge level of participants and their behavior.

## V. CONCLUSION

The knowledge score and practice score was comparatively high in our study population. It suggests that there was a connection between the knowledge level of participants and their behavior. Also they were practically applying their theoretical knowledge. However, attitudes were poor. All these attributes was found be better than the general population.<sup>(15)</sup>

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