

## DESCRIPTION OF THE INCIDENCE OF URINARY TRACT STONES IN PATIENTS AT TGK CHIK DITIRO SIGLI REGIONAL HOSPITAL FOR THE PERIODE JANUARY - DECEMBER 2023

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### ABSTRAK

Urolithiasis merupakan pembentukan batu disaluran kemih yang meliputi batu ginjal, ureter, bulu dan uretra. Pembentukan batu dapat diklasifikasikan berdasarkan etiologi yaitu infeksi, non infeksi, kelainan genetik dan obat-obatan. Penelitian ini bertujuan untuk mengetahui prevalensi angka kejadian batu berdasarkan usia dan jenis kelamin pasien. Penelitian ini merupakan penelitian deskriptif kuantitatif dengan menggunakan data sekunder dari catatan rekam medik pasien rawat jalan dan rawat inap bagian Urologi di RSUD Tgk Chik Ditiro Sigli selama periode Januari - Desember tahun 2023. Total data berdasarkan kriteria inklusi yaitu 441 pasien, dengan kelompok usia terbanyak yaitu 45 tahun - 64 tahun berjumlah 192 pasien atau (43,54%), dan berdasarkan jenis kelamin terbanyak pada pria yaitu 291 pasien atau (65,99%).

**Kata Kunci:** Urolithiasis, Pasien, Prevalensi, Batu Saluran Kemih.

### ABSTRACT

*Urolithiasis is the formation of stones in the urinary tract which include kidney stones, ureters, feathers and urethra. Stone formation can be classified based on etiology, namely infection, non-infection, genetic disorders and medication. This study aims to determine the prevalence of stone incidence rates based on the patient's age and gender. This research is a quantitative descriptive study using secondary data from medical records of outpatients and inpatients in the Urology department at Tgk Chik Ditiro Sigli Regional Hospital during the period January - December 2023. The total data based on the inclusion criteria was 441 patients, with the largest age group being 45 years - 64 years amounting to 192 patients or (43.54%), and based on gender the largest number was men, namely 291 patients or (65.99%).*

**Keywords:** Urolithiasis, Patients, Prevalence, Urinary Tract Stones.

### INTRODUCTION

Urolithiasis is defined as the formation of stones within the urinary tract, which encompasses the kidney, ureter, bladder, and urethra.(1)

Stone formation can be classified based on etiology, namely infection, non-infection, genetic disorders, and drugs. There are various factors that can facilitate the formation of urolithiasis, namely heredity, age, gender, lack of water consumption, high levels of calcium in drinking water, a diet high in protein, oxalate, calcium, sitting a lot or lack of physical activity. (2-4).

Calcium (either calcium phosphate or calcium oxalate) is the most prevalent composition of urolithiasis, occurring in approximately 85% of cases. The remaining 10% of patients present with uric acid stones, while the remaining 5% exhibit a heterogeneous composition, including cystine, brushite, and magnesium ammonium phosphate (struvite). (3-5).

Sja'bani, et al observed that of the 96 urolithiasis types analyzed, 24 (25%) were composed of uric acid in its pure form, while 71 (73%) were found to be mixed with calcium oxalate/calcium phosphate.(2)

The range of complaints associated with urolithiasis is broad, ranging from no complaints, mild to severe back pain (colic), dysuria, hematuria, urinary retention, and

anuria. These complaints can be accompanied by complications such as fever and signs of kidney failure. (5)

In developed countries such as the United States, Europe and Australia, urolithiasis is often found in the upper urinary tract, while in developing countries such as India, Thailand and Indonesia, bladder stones are more common. (6)

In the United States, around 250,000 to 750,000 residents suffer from urolithiasis every year. On average, the prevalence of this phenomenon is estimated to be between 1 to 10% globally. The incidence of urolithiasis is about four times higher than that of women, except for stones containing struvite, which occur more often in women and this incident occurs on average at the age of 30 to 50 years. In Indonesia, data about urolithiasis has not been reported completely. The incidence of urolithiasis in Makassar from 1977 to 1979 was around 269, while in 1987 to 1992 around 122 and in 1997 to 1998 around 50. The latest data in 2002 to 2004 it was around 199. Meanwhile at RSCM the incidence of urolithiasis was reported to be around 0.5% and at PGI Cikini Hospital there were around 530 people suffering from urolithiasis per year.(7)

In Indonesia, the problem of urolithiasis is still the most common among all urology cases. There is no data on the national prevalence of urolithiasis in Indonesia. In several countries in the world it ranges between 1-20%. In men, it occurs more often than in women, namely 3:1, with the peak incidence occurring at the age of 40-50 years.(8)

The prevalence of kidney stones in Indonesia based on doctor interviews is 0.6%. The highest prevalence of incidence is in the province of DI Yogyakarta, namely 1.2%, followed by the province of Aceh at 0.9% and the province of West Java, Central Java and Central Sulawesi are 0.8%.(9)

This study aims to identify cases of urolithiasis that occurred at Tgk Chik Ditiro Sigli Regional Hospital. This research is carried out by examining data on the characteristics and diagnoses of patients who came for treatment at the polyclinic and patients who were hospitalized at Tgk Chik Ditiro Sigli Regional Hospital.

## **METHOD**

This research employs a quantitative descriptive method using secondary data from medical records of outpatients and inpatients in the Urology Department at Tgk Chik Ditiro Sigli Regional Hospital during the period January–December 2023. The data taken are the patient's name, patient diagnosis, gender, patient age group and patient residence.

In the last 3 months, the researchers first conducted a topic study, took data and concluded conclusions from the data obtained. Researchers also conducted a comparative study with several studies that had been conducted previously to determine purposive and non-probability sampling to apply. Then the researchers created research exclusion and inclusion criteria.

1. Inclusion criteria
  - a. Medical record data for patients in the Urology Department at Tgk Chik Ditiro Sigli Regional Hospital for the period January– December 2023.
2. Exclusion criteria
  - a. Incomplete medical record data according to the medical record format.
  - b. Data on control patients who were re-/treated for the same disease.
  - c. Inpatient and outpatient data that have been mixed in the medical record.

## **RESULT AND DISCUSSION**

There are many extrinsic and intrinsic factors related to this disease such as age, gender, ethnicity, previous medical condition, socioeconomic, type of work, family history,

and dietary factor.(8)

In this study, the incidence of urolithiasis in 2023 was found 441 patients, 291 men and 150 women. Based on age group, the highest number is 45-64 years old totaling 192 people (43.54%), followed by 25-44 years old totaling 137 people (31.07%), >65 years totaling 56 people (12.70%), 15-24 years totaling 42 people (9.52%), 5-14 years (1.81%) and 0-4 years (1.36%). Urolithiasis can regarding both men and women, conventionally obtained that men are more risky than women.(10)

Prevalence of urolithiasis in men is more often associated with sex hormones on the risk factor of stone formation where androgens increase. Meanwhile. estrogens decrease oxalate excretion and calcium oxalate deposition in the kidney.(9)

In this study, urolithiasis was found higher in men compared to women.

## CONCLUSION

The findings of this research indicate that the incidence rate based on gender is higher in men than in women. Specifically, there were 291 men (65.99%) and 150 women (34.01%). Subsequently, based on the age group 45-64 years was the highest with 192 people or 43.54% and the lowest in the 0-4 years totaling 6 people or 1.36%.

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