



THE CHARACTERISTICS OF KIDNEY STONE PATIENTS AND THEIR MANAGEMENT AT DR. PIRNGADI MEDAN GENERAL HOSPITAL IN 2016

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ABSTRAK

Keywords: Academic Stress, Menstrual Cycle, College Student

Kidney stones are formation of new crystals of urine solution in the urinary tract due to changes in the saturation of substances in the urine. This is research uses a descriptive study using a retrospective case study design to determine the characteristics of kidney stone patients and their management at Dr. Pirngadi Medan General Hospital in 2016. Data were taken from medical record of patients with kidney stones diagnosed in August - September 2017 and analyzed and presented in tables. We found that the incidence of kidney stones was higher in male (56,2%) than in female (43%), with the highest incidence in the 46-52 year age group (26,25%) and the lowest in the >70 age group, and the majority of patients had no history family with kidney stones (83.8%). Based on education, the highest proportion of patients is at senior high school (78,8%) and the lowest proportion at the college level (5%). Highest incidence found in entrepreneur (32,5%) followed by housewives (30%) and driver was the lowest (1,2%). Management of kidney stones categorized by medication in 16 people (20%), and surgery in 64 people (80%) The highest characteristics based on educational background were the group with Senior High School graduates, and the majority of sufferers had self-employed jobs.. Complete data regarding kidney stone cases is needed for future larger descriptive epidemiological studies.

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Artikel dengan akses terbuka dibawah lisensi



Introduction

Kidney stones are formation of new crystals of urine solution in the urinary tract due to changes in the saturation of substances in the urine. Kidney stones are one of the most common urological disorders and have been found in humans since ancient times (Paulsen & Waschke, 2012) (Harrison, 2013) (Purnomo, 2014). The first case described by Shattock in 1905 in an Egyptian mummy around 4400 BC. In a 25 year study of the incidence of kidney stones from 1950-1974 in the USA population the overall rate for men was 109.5 per 100,000 and the rate for women was 36 per 100,000. In a more recent prospective study by Curhan et al, the incidence of stone disease was found to be 300 per 100,000 in men and 100 per 100,000 in women (Karthia, Calle, Marchini, & Monga, 2013) (Sorokin et al., 2017). It increases significantly after the age of 35 years, especially between the ages of 50 and 70 in men but relatively constant in women. The male: female ratio of kidney stone incidence increased from 1.8: 1 to 3.8: 1 during the entire study period. Yoshida concluded that there was a steady increase in kidney stone disease in Japan over a 30-year period. The lifetime prevalence of kidney stones was found to be 10% for men and 4% for women, where the most common type of kidney stone is the calcium type (Stoller, Park, Zhu, An, & Ruoff, 2008).

In Indonesia, kidney diseases that are quite often found include kidney failure and kidney stones. According to data from the (2013) Basic Health Research, it was found that the highest prevalence of kidney stone sufferers in Indonesia was DI Yogyakarta province (1.2%), followed by Aceh (0.9%), West Java, Central Java and Central Sulawesi each at (0.8%). East Java, Bali and East Nusa Tenggara each amounted to (0.7%), Gorontalo (0.6%). The prevalence of kidney stones occurs in 0.3% of cases in North Sumatra. The prevalence of kidney stones increases with increasing age, highest in the age group 55-64 years (1.3%), decreasing slightly in the age group 65-74 years (1.2%) and age \geq 75 years (1.1%).), higher in men (0.8%) than women (0.4%). The highest prevalence (0.8%) is low educated, as well as those who are self-employed (0.8%) and same in low and middle economic status (0.6%). The prevalence in rural areas is as high as urban areas (0.6%). There were 81 kidney stone's patients according to a preliminary survey at RSUD Dr. Pirngadi Medan in 2016.

Research conducted by Nur Afiat Wahyuni, the results showed that the average age of patients with kidney stones was 45-59 years, which was 52% in 2021, and 45% in 2022. With the highest sex being male at 58% in 2021, and 51% in 2022. Most kidney stone sufferers are educated sarja amounting to 61% in 2021, and 58% in 2022 (Wahyuni et al., 2022). What distinguishes this research is the place where the research is carried out. Based on the background above, researchers want to know the characteristics of kidney stone sufferers and their management at Dr. Hospital. Pirngadi Medan 2016.

Research Methods

This study used descriptive research. With a retrospective case study research design. There were 80 samples obtained through total sampling in Agustus - September 2017. Subjects were all kidney stone patients recorded in secondary medical record data

at Dr. Pirngadi Medan General Hospital in 2016. This research is a descriptive study using a retrospective case study design to determine the characteristics of kidney stone patients and their management at Dr. Pirngadi Medan General Hospital in 2016 in 2016.

Data was analyzed secondary data of kidney stone patients was univariate. Univariate analysis to determine the characteristics and the prevalence of kidney stone patients in Dr. Pirngadi Medan general Hospital. All data were analysed presented in tables and continued by discussing the research results using existing theory and literature.

Results and Discussion

The proportion of kidney stone was more in male (56,2%) than in female (43%). Based on age, the highest proportion of kidney stones patient was 45-63 years old (26,25%), and after this age, the incidence decreases with increasing age with lowest was 74-80 years old. There were 13 patients with a family history of disease (16.2%) while there were 67 patients (83.8%) with no family history of disease. Based on ethnicity, the highest proportion of gastritis sufferers was Bataknese (58,8%), and the lowest was Nias (1,2%). Based on education, the highest proportion of patients is at high school level (78,8%) and the lowest proportion at the college level (5%).

Based on the occupation, the highest was entrepreneur (32,5%) followed ny housewives (30%) and driver was the lowest (1,2%). Management of kidney stones chategorized by medication in 16 people (20%), and surgery in 64 people (80%) All the characteristic were presented (Table 1).

Table 1. Baseline and clinical characteristics of subjects

Socio-demographics	n	%
Gender		
Male	45	56,2%
Female	35	43,8%
Age		
32 – 38 years old	10	12.5%
39 – 45 years old	11	13.75%
46 – 52 years old	21	26.25%
53 – 59 years old	19	23.75%
60 – 66 years old	10	12.5%
67 – 73 years old	6	7.5%
74 – 80 Tahun	3	3.75%
Family History		
Any family history	13	16,2%
No family history	67	83,8%
Ethnicity		
Nias	1	1,2%
Melayu	6	7,5%
Jawa	26	32,5%
Batak	47	58,8%
Occupation		
Civil Servants	8	10%
Entrepreneur	26	32,5%

Socio-demographics	n	%
Private sector employee	9	11,2%
Housewives	24	30%
Farmer	8	10%
Driver	1	1,2%
Retired	4	5%
Education		
Elementary	6	7,5%
Middle school	7	8,8%
High School	63	78,8%
College	4	5%
Management		
Medicamentosa	16	20%
Surgery	64	80%

Discussion

In this study, it was showed that majority of gastritis patients were male (56,2%). This result is similar to the research conducted by Stoller's theory states that men tend to experience larger kidney stones due to metabolic/hormonal abnormalities (Stoller et al., 2008). This research is also in accordance with RISKESDA, where kidney stones in Indonesia were found to have a higher prevalence in male at 0.8% compared to female. According to Purnomo's study, total male patients is three times greater than female (Ri, 2013) (RI, 2019).

The distribution of kidney stone sufferers based on age found that the highest number of cases were 21 people aged 46-52 years (26.25%) and the lowest were those aged 74-80 years (3.75%). According to RISKESDA (2013), the prevalence of kidney stones increases with increasing age, highest in the age group 55-64 years (1.3%), decreasing slightly in the age group 65-74 years (1.2%) and age \geq 75 year (1.1%). The results of this study are in accordance with Cahyono's (2009) theory that the peak incidence of kidney stones is at the age of 30-60 years. Likewise, according to the theory of Purnomo which states that this disease is most often found at the age of 30-50 years.

Tiselius stated that a family history of kidney stones is greater in the occurrence of stone formation. This is the same as Stoller's theory which states that kidney stones are thought to be inherited from parents. We found different result in this study, which the distribution of kidney stone sufferers based on family history of disease in table 4.3 shows that the number of people with a family history of disease is smaller or 13 people (16.2%) and the number of people who do not have a family history of disease is 67 people (83.8%).

The incidence of kidney stones is linked to several work habits in certain professions. According to Purnomo, this disease is often found in people who work a lot of sitting or lack activity, because rock crystals can accumulate (Silla, 2019) (Budiarti, 2020). Meanwhile, according to Cahyano, someone who does daily work that uses more physical strength and lives in a hot climate and is exposed to the sun has a greater chance of developing kidney stones. In this research, the distribution of kidney stone sufferers based on occupation was highest among self-employed people with 26 people (32.5%)

and the lowest among drivers with 1 person (1.2%), similar to RISKESDA (2013) which found the highest number of kidney stone sufferers. among self-employed people (0.8%), employees (0.7%), farmers (0.7%), and those who do not work (0.5%). RISKESDAS also stated that the highest prevalence was subject who have not attended school and have not completed elementary school (0.8%) while those who have graduated from high school (0.5%). In this study, we found different result. Where the distribution of kidney stone sufferers based on education was highest among high school graduates as many as 63 people (78.8%), and the lowest among undergraduate graduates as many as 4 people (5%).

Kidney stone patients based on ethnicity were highest in the Batakese at 47 people (58.8%), followed by the Javanese at 26 people (32.5%), the Malay at 6 people (7.5%), and the Nias at 1 (1.2%). There is no theory that explains ethnicity specifically, however RISKESDA (2013) divides the highest prevalence of kidney stone sufferers in Indonesia, namely DI Yogyakarta province (1.2%), followed by Aceh (0.9%), West Java, Central Java, and Central Sulawesi each at (0.8%). East Java, Bali and East Nusa Tenggara each amounted to (0.7%), Gorontalo (0.6%). Lampung, DKI Jakarta, North Sulawesi, South Sulawesi, Southeast Sulawesi and Maluku each amounted to (0.5%). West Sumatra, Jambi, Bengkulu, Banten, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Maluku and Papua each amounted to (0.4%). North Sumatra, South Sumatra, Riau Islands, West Nusa Tenggara and West Papua each amounted to (0.3%). Riau and West Sulawesi were (0.2%), and the lowest was Bangka Belitung province (0.1%).

The decision to treat kidney stones depends on the size of the stone found on radiological imaging examination (Prihadi, Soeselo, & Kusumajaya, 2021) (Kurniawan, 2019) (Rasyid et al., 2018). Kidney stones measuring <4 mm will pass spontaneously, and for kidney stones measuring > 7 mm it will be difficult to pass spontaneously, for larger stones operative techniques such as ESWL, PNL, and Open Surgery: Open Nephrolithotomy, will be used. Pyelolithotomy, Bivalve Nephrolithotomy (Danarto, 2021) (Bilqisthi, Prasetyo, & Romadhoni, 2023). The treatment used in patients with kidney stones is alpha blockers such as Tamsulosin, diuretics (Spirinolactone, Hydrochlorothiazide), and anti-pain medications such as NSAIDs (Ketoprofen, Ketorolac, Mefenamic Acid). In this study, the distribution of kidney stone sufferers based on the most frequently used management was surgery, 64 people (80%), and medication, 16 people (20%).

Conclusion

Based on the explanation above, it can be concluded that secondary data from medical records of 80 patients, we found that the incidence of kidney stones was higher in men than women, with the highest incidence in the 46-52year age group and the lowest in the >70 age group, and the majority of patients had no history of the disease. family with kidney stones. In this study, it was found that the highest characteristics based on educational background were the group with Senior High School graduates, and the majority of sufferers had self-employed jobs. Management of kidney stone cases in patients at Dr. Pirngadi Medan mostly uses operative techniques compared to medical ones. Complete data regarding kidney stone cases is needed for future larger descriptive epidemiological studies.

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