



UROLOGIC CANCER IN ADAM MALIK GENERAL HOSPITAL

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**ABSTRACT**

**INTRODUCTION:**Urological cancers are one of the most common type of cancers worldwide. We would like to describe the profile of urological cancer in Indonesia.

**MATERIALS AND METHODS:**Data collected retrospectively from in 2013 – 2017 in Haji Adam Malik General Hospital, with prostate cancer, kidney tumor, bladder cancer, testicular tumor, penile cancer, and adrenal tumor. We classify the data based on the year, age, gender, pathological examination, diagnosis, treatment.

**RESULTS:**A total of 446 urologic cancer cases included (364 males (81.6%) and 82 females (18,3%)). Prostate cancer is the highest cancer incidence (167 cases (37,4%)), bladder cancer 133 cases (29.9%), and penile cancer 72 cases (16.1%). The lowest incidence is adrenal cancer 1 case (0.1%), renal 43 cases (9.6%) and testicular 30 cases (6.7%).

**CONCLUSION:**Indonesian urologists, other healthcare providers, government and non-government organizations must collaborate to promote health education to minimize the incidences of urologic cancer in Medan.

**KEYWORDS :** Urologic Cancer, Prostate Cancer, Bladder Cancer, Penile Cancer, Adrenal Cancer

**INTRODUCTION**

Cancer is a major public health problem worldwide and is the second leading cause of death globally, and was responsible for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer<sup>1</sup>. Urological cancers are one of the most common type of cancers in the world. In Indonesia, the morbidity and mortality rates are mostly happened in the middle and lower socioeconomic population. Urological cancer is a disease with multifactor causes that formed over a long period of time and progressed through different stages<sup>2,3</sup>. According to Globocan 2012, prostate, bladder and kidney cancer are among 20 most common cancers in both sexes in Indonesia. They ranked sixth, twelfth and eight-tenth respectively<sup>3,4</sup>.

Some of our Colleagues have already studied the profile and characteristic of urology cancer in Indonesia like studies which had already done by Zulfikar Y et al in 2010, Wahidin et al in 2012, Umbas et al in 2015.<sup>3,5,6</sup>, and also from the other nations, Japan Hideyuki Akaza in 2015, China Cheng Pang et al in 2016, Taiwan Chi-Feng Hung et al in 2016.<sup>8,12,35</sup> Therefore, in this study we would like to describe the profile of urological cancer based on our medical record data in our institution.

**METHODS**

We conduct this study in Haji Adam Malik General Hospital in Medan. Data were collected retrospectively from the medical records of all the patients with urologic cancer in 2013-2017 (5 years). The patients whose data were collected are patients with prostate cancer, kidney tumor, bladder cancer, testicular tumor, penile cancer, and adrenal tumor. We classify the data based on year when patient was admitted and organ that were exposed by cancer. We collected age, gender, pathological examination, diagnosis, type of treatment the patient would have.

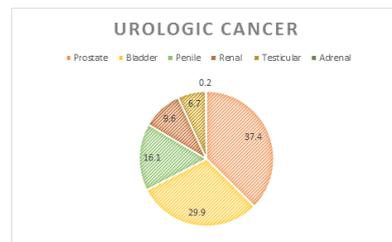
**RESULT**

From the collected data we found 446 urologic cancer cases from 2013-2017 in Haji Adam Malik General Hospital Medan. From the data we found that from 446 cases, 364 are male patients (81.6%), followed by woman with 82 patients (18,3%). For the target organ statistic, the data showed that prostate

cancer is the highest cancer incidence across the last 5 years with 167 cases (37,4%), followed by bladder cancer with 133 cases (29.9%) in second place, and penile cancer with 72 cases (16.1%) in third place. The lowest cancer incidence in this study is adrenal cancer with 1 case from 2013-2017 (0.1%), followed by renal 43 cases (9.6%) and testicular 30 cases (6.7%).

**Table 1. Characteristic table**

Variable (n = 446)	N (%)
Age	59 (±16.907)
Sex	
• Man	364 (81.6%)
• Woman	82 (18.3%)
Organ	
• Prostate	167 (37.4%)
• Bladder	133 (29.9%)
• Penile	72 (16.1%)
• Renal	43 (9.6%)
• Testicular	30 (6.7%)
• Adrenal	1 (0.2%)



**DISCUSSION**

Cancer incidence raised annually up to 8% within the last decade whereas the cancer morbidity was raised from 3.4% in 1980 to 5.7% in 2007 and it became the seventh leading reason for death in Indonesia<sup>7</sup>. According to Report of National Basic Health Research these raising trends may be thanks to many factors cherish exposure to matter of carcinogen, chronic infection and longer lifetime expectancy<sup>7</sup>. Unhealthy diet and fewer physical activity result in 19% overall fatness in the

population older than fifteen years old, that are risk factors for malignant diseases.

Therefore, in this article we would like to highlight these urologic cancers based on our institution.

**PROSTATE CANCER**

Prostate cancer is the second leading cause of cancer-related death in men in the western world, second to lung cancer. Although there is a noticeable difference in the incidence rates in Asian and Western country<sup>13,17,18</sup>. However, cancer in Asia is expected to dramatically increase and cause burden to human development index in Asia<sup>36</sup>. Growth of the prostate gland is initially dependent on androgen and the tumor marker to diagnose prostate cancer is known as prostate-specific antigen or PSA<sup>13,18</sup>. Many of treatment that can be utilize in prostate, such as; bilateral adrenalectomy and androgen deprivation therapy, and some still an ongoing research, that includes; abiraterone acetate plus prednisone chemotherapy, and enzalutamide usage before chemotherapy.<sup>14,16</sup>

In Indonesia itself the incidence of Prostate cancer compared with the reports from western countries was relatively low, according to Ferlay et al (2013)<sup>4</sup>. However, based on report from akaza, et al (2013), prostate cancer patients in Indonesia increased within the last decade and it becomes the third commonest cancer in men<sup>9</sup>. IAU guideline suggests performing a digital rectal examination (DRE) and prostate specific antigen (PSA) measurement in men older than 50 years, or 40 years in patients with family history of prostate cancer, who came with lower urinary tract symptoms (LUTS)<sup>11</sup>. A recent survey of the Indonesian urologists reported that DRE was done in all patients with LUTS and in 83% of patients with elevated PSA<sup>10</sup>. In Jakarta and Surabaya study proposed a PSA cutoff of 8 ng/ml and 10 ng/ml. In our study we have found that prostate cancer in the highest urologic cancer cases with 167 cases (37.4%), with PSA cutoff was 4 ng/ml, 56.6 % was positive prostate cancer.

According to IAU guidelines, the treatment option depends on risk factors and patient's age; however, many factors such as co-morbidity, compliance, patient's residence and preference are also considered. In our region, radical treatment by radical prostatectomy (RP) was no been considered because of the refusal from the patient, androgen deprived therapy (ADT) was the most options. ADT that we perform in our institution was total androgen blockage (53 cases, 31.7%) and sub-capsular orchiectomy bilateral (114 cases, 68.2%).

**BLADDER CANCER**

Bladder cancer (BC) is one of the common cancers of both sexes in Indonesia<sup>4</sup>. Bladder cancer is an international public health problem that commonly occurs in developing country. BC need to be taken seriously in developing country due to lower survival rate in developing country than those from the USA<sup>37,39</sup>. As it was reported by Umbas et al (2007), The incidence increased ~15% per year in the last decade with Transitional cell carcinoma (TCC) as the most histological type (78.8%), followed by Squamous cell carcinoma (SCC) (10.2%), adenocarcinoma (8.6%) and sarcoma (2.4%)<sup>20</sup>. Most of the patients with SCC type had concomitant bladder stone at diagnosis (37.1%) or history of bladder stone operation performed between 1 and 25 years<sup>20</sup>. In our study we found that bladder cancer is the second most common urologic cancer (133 cases) in Haji Adam Malik General Hospital from 2013-2017 in Medan. Compared to China as one of the largest countries in Asia with the highest population on Earth, bladder cancer was one of the most common urologic malignancies<sup>21,28</sup>.

For BC diagnosis, we screened all patients with hematuria using urine cytology<sup>23,24</sup>. As a rule, an underlying ultrasound examination will be performed. A further radiologic examination, in examples iv contrast abdominal Ct-scan, was performed to assess the tumor invasion, regional lymph node and metastasis site<sup>25,26</sup>. In China, cystoscopy can be used in terms of diagnosing, giving follow up, and giving a prognosis to the patient, according to Na et al<sup>22</sup>. According to Supit et al (2011), our guideline in Indonesia, we performed cystoscopy and transurethral resection of bladder tumor (TURBT) as the gold standard for BC diagnostic and definitive treatment in non-muscle-invasive bladder cancer (NMIBC)<sup>27</sup>. Early intravesical chemotherapy installation, for the most part with Mitomycin-C, will be given inside 24 h after TURBT when all of the tumors are effectively expelled and there is no suspicious of bladder puncturing. In our institution 3 NMIBC have done Mitomycin-C instillation for 8 times and for 3 years follow-up 1 patient has recurrent BC, has done re-TURBT.

**Table 2. Clinicopathological characteristics of bladder cancer patients in Medan**

Characteristics	Number of patients (%)
Muscle-invasion	3 (2.25%)
• NMIBC (Stage 0, I)	130 (97,7%)
• MIBC (Stage II, III, IV)	

MIBC, muscle-invasive bladder cancer; NMIBC, non-muscle-invasive bladder cancer.

A report of 133 BC treated from 2013-2017, heterogeneous treatment was summarized in table 2. In common, the issue of treatment refusal significantly hinders cancer treatment in Indonesia. The underlying cause is not only due to socioeconomic and financial issues, but also due to the lack of knowledge.

**Table 3. Treatment options between NMIBC and MIBC**

Treatments	NMIBC (%)	MIBC (%)
Radical Cystectomy	-	20 (15%)
Chemoradiation	-	11 (8.2%)
EBRT	-	7 (5.2%)
Intravesical Mitomycin C with TURBT	3 (2.2%)	-
TURBT only		24 (18%)
Patient refusal of treatment	-	68 (51.1%)

**PENILE CANCER**

Penile cancer is urologic cancer affecting about one in 100,000 men worldwide in a year, thus penile cancer classified as one of the so-called 'rare malignancies'<sup>40,41</sup>. It's prevalence highest in developing country such as; Thailand and lead into high morbidity and mortality<sup>45,48</sup>. Study from National Taiwan University Hospital there were 71 cases within 20 years<sup>19</sup>. It is estimated that at least 40% of penile cancers cases are attributable to human papillomavirus (HPV)<sup>43</sup>. In our institution penile cancer was the third most cases of urologic cancer, 72 cases within 5 years. On the other hand, there are 283 new cases of penile cancer in brazil ranging from 2006-2006 that predominantly affecting; low income, living in the north or northeast side of the country, white, and uncircumcised patients<sup>44</sup>. In Uganda, penile cancer are more rarely to be find than prostate cancer<sup>46</sup>. Numbers of cases in our region was affected by culture and religion, that has no circumcision, lack of education and knowledge. According to Larke et al, childhood/adolescent circumcision elicit a strong protective effect from an invasive penile cancer<sup>42</sup>. Is is due to phimosis that associated with risk of balanitis that can lead into penile cancer, removing the foreskin can reduce it<sup>147</sup>. From 72 cases, almost all came with advanced stage, chemotherapy and total penectomy was done (see table 4).

**Table 4. Treatment option in penile cancer**

Treatment	Number of patients (%)
Penectomy	35 (48.6%)
Chemotherapy	12 (16.6%)
Refusal of treatment	25 (34.7%)

**KIDNEY CANCER**

In our Study, kidney Cancer is in fourth place 43 (9,6%) as the highest urologic cancer behind prostate, bladder, and penile cancer. According to Ferlay et al (2012), In Indonesia, the overall incidence of kidney cancer is estimated to be 2.4–3 cases/100 000 population. This is an increase from an earlier estimate, which calculated the overall incidence to be 1.4–1.8 cases/ 100 000 population.<sup>4</sup> Due to lack of follow-up data, Hamiseno, et al., (2011) could not estimate the survival rate of our kidney cancer patients<sup>30</sup>. Another research which specifically looked for RCC cases in Cipto Mangunkusumo Hospital from 1995 to 2009 found 99 cases, which is 33% of all kidney cancer cases. That study also reveals an increase in the hospital incidence of 1.5- to 2-fold for every 5 years period. Metastatic disease on the first presentation was found in 37% of all RCC cases<sup>30</sup>. There are quite a significant number of squamous cell and transitional cell carcinoma (TCC) of the kidney caused by kidney stones<sup>6,29</sup>.

The essential treatment of kidney malignancy cases incorporates careful resection of the influenced kidney. For the most part, the treatment was done as open radical nephrectomy, with just a couple of focuses doing it laparoscopically<sup>34</sup>. In addition, nephrectomy also alleviates the response rate of chemotherapy in metastasized RCC<sup>31,32</sup>. In our institution we have done 43 nephrectomy several cases done in laparoscopy. Partial nephrectomy is rarely performed because the tumor stage at presentation is mostly T2 or more. Just two institutions ('Cipto Mangunkusumo' and 'Hasan Sadikin' Hospital) are doing laparoscopic partial nephrectomy. According to Naito et al, the median survival time of RCC patient that already metastasized was 21.4 months<sup>33</sup>.

**CONCLUSION**

There are increasing incidences of urologic cancer in Medan, especially prostate, bladder, penile, and kidney cancer. Nevertheless, treatment refusal is still common and advanced stage is the common incidences, due to patient ignorance. As a result, it is important for the Indonesian urologists especially in Medan, other healthcare providers, government and non-government organization to work together in community health education to minimize these problems. From this data our institution can complete the national data for urologic cancer in Indonesia.

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