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Clinicopathological Characteristics of Prostate Adenocarcinoma at Hasan Sadikin General Hospital from 2016-2023

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ABSTRACT

Background
Prostate adenocarcinoma (PA) ranks as the fifth most prevalent malignancy in men and the fifth leading cause of death in Indonesia. The growing number of elderly population and increased use of Prostate Specific Antigen (PSA) testing have led to a threefold rise in Prostate Carcinoma (PC) incidence in recent years. This study aims to profile the clinicopathological characteristics of PA cases at Hasan Sadikin General Hospital (RSHS) in Bandung during the period 2016-2023.

Methods
We conducted a descriptive, cross-sectional study at RSHS in Bandung, utilizing medical records for data collection. Inclusion criteria comprised all histopathologically diagnosed PA cases between 2016 and 2023, with exclusion criteria pertaining to patients with incomplete medical records.

Results
Our study revealed an average patient age of 72±9.0 year old. The most prevalent age group was those aged 70-79 years old (n=73, 38.8%). The mean PSA level among patients was 256±375.5 ng/ml). The majority of patients were diagnosed at stage IV (n=128, 68.1%). Biopsy was the most frequently used specimen collection method (n=154, 81.9%). Most samples exhibited a Gleason Score of 9 (n=65, 34.6%), belonged to Grade Group 5 (n=84, 44.7%), and had a poorly differentiated histopathological grade (n=132, 70.2%). Approximately 68.1% of patients presented with metastatic disease, with bone metastases being the most common (n=55,70,5 %).

Conclusion
PA typically manifests in older individuals, frequently manifesting in 70-79 age group with less favorable histopathological features.

Keywords: adenocarcinoma, prostate, clinicopathological

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INTRODUCTION

Prostate Carcinoma (PC) is the most frequently reported cancer in men, with an alarming global incidence of over 1.2 million new cases diagnosed each year, contributing to approximately 350,000 annual deaths.[1] In 2020, PC ascended to become the second most common malignancy and the fifth leading cause of death in men worldwide. The incidence of PC varies markedly, ranging from 6.3 to 83.4 cases per 100,000 men across different regions, with the highest incidence recorded in Northern Europe.[2]

GLOBOCAN data from 2020 reveals a concerning scenario for Indonesia, with approximately 13,563 new PC cases registered, leading to 4,863 deaths attributed to this cancer.[2] These statistics position PC as the fifth most prevalent malignancy and the fifth leading cause of cancer-related death among men in Indonesia. The incidence rate for PC reached 11.6 cases per 100,000 men, with a mortality rate of 4.5 per 100,000 men throughout the country. [2,3] The surge in PC incidence in recent years can be primarily attributed to the aging population and the increasing prevalence of Prostate Specific Antigen (PSA) screening practices in Indonesia.[4]

Despite the significant impact of PC on male health and the population at large, comprehensive clinicopathological data specific to Indonesia remains largely unavailable. Thus, our study sought to address this gap by determining the clinicopathological characteristics of AP at Hasan Sadikin General Hospital (RSHS) in Bandung. This research spanned from January 1, 2016, to August 31, 2023, providing valuable insights into the clinical and pathological landscape of this disease within the Indonesian context. These findings are expected to aid in the formulation of targeted strategies for the diagnosis, treatment, and prevention of prostate cancer in Indonesia.

METHODS

This cross-sectional study employed a descriptive observational method. The data collection was conducted at Hasan Sadikin General Hospital (RSHS), where medical records of patients diagnosed with Prostate Adenocarcinoma (PA) were gathered from January 1, 2016, to August 31, 2023. The study population encompassed all patients with Prostate Carcinoma (PC) who received a PA diagnosis via histopathology in the Anatomical Pathology Department of RSHS.

The study employed a total sampling technique, collecting data from 188 AP cases. Information on patient age, Prostate Specific Antigen (PSA) level, specific medical procedures, cancer stage, Gleason Score (GS), Grade Group (GG), Histopathological Grade (well differentiated/ moderately differentiated/ poorly differentiated), and metastatic status were retrieved from the medical records. Cases involving differential diagnoses and results from immunohistochemistry not indicative of PA were excluded from the study.

RESULTS

The clinicopathologic study conducted revealed the following data, as presented in Table 1.

Table 1 Clinicopathological data PA cases between 2016-2023.

Characteristic	n	%
Age		
<50 years old	2	1.1
50-59 years old	14	7.4
60-69 years old	56	29.8
70-79 years old	73	38.8
>80 years old	43	22.9
PSA		
<10 ng/ml	8	4.3
10-20 ng/ml	10	5.3
>20 ng/ml	170	90.4
Treatment procedure		
Biopsy	154	81.9
Prostatectomy	11	5.9
TURP	23	12.2
Stage		
I	5	2.7
II	29	15.4
III	26	13.8
IV	128	68.1
Gleason score (GS)		
6	18	9.6
7	38	20.2
8	48	25.5
9	65	34.6
10	19	10.1
Grade Group (GG)		
1	18	9.6
2	13	6.9
3	25	13.3
4	48	25.5
5	84	44.7
Histopathological grade		
Poorly differentiated	132	70.2
Moderately differentiated	38	20.2
Well differentiated	18	9.6

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Table 2. Metastatic status.

Metastatic Status	n	%
Non-metastatic	60	31.9
Metastatic		
One site	78	41.5
Bone	55	70.5
Lung	16	20.5
Liver	7	9
Multiple sites (>1 site)*	22	11.7
Not available	28	14.9

*Bone, lung, liver, brain, non regional lymph node, and regional lymph node

Based on the analysis of 188 case samples, the most prevalent age group among PA patients was 70-79 years old, accounting for 73 cases (38.8%). A small proportion of cases (1.1%) were observed in patients under 50 years old. The majority of cases exhibited a PSA level exceeding 20 ng/ml. Biopsy emerged as the most frequent procedure performed on PA patients at RSHS, accounting for 154 cases (81.9%). Stage IV was the most prevalent stage among PA patients, with 128 cases (68.1%). The majority of cases were classified as Grade Group 5 (n=84; 44.7%) and presented a poorly differentiated histopathological grade (n=132; 70.2%). Imaging examinations were conducted to determine the metastatic status, with the majority of metastases (Table 2) detected in the bone (n=55, 70.5%). Notably, 28 cases lacked complete data concerning metastatic status due to the absence of comprehensive imaging examinations.

DISCUSSION

Based on our clinicopathological study, the highest proportion of PA cases occurred in the 70-79 years old age group, with 73 cases (38.8%) out of 188 cases. Our findings align with the data presented in the article "Prostate Cancer" by Bott et al, which highlights that the likelihood of developing prostate cancer increases from 0.005% in men younger than 39 years old to 2.2% in men between 40 and 59 years, and significantly rises to 13.7% in men aged 60 to 79 years old. Moreover, approximately 50% of prostate biopsy from men between 70-80 years old exhibit histological evidence of malignancy.[5] Consistent results were observed in the study by Andreas et al (2017) conducted at Dr. M. Djamil Padang Hospital, indicating the highest prevalence in the 70-79 years old age group (39.22%), followed by the 60-69 years old age group (27.45%).[6] Oktavia et al also reported similar results, identifying the 71-80 years old age group as the most affected (n=42, 39.62%).[7]. Conversely, the research by Dany et al indicated similar percentages for the 60-70 years old and >70 years old age groups, each accounting for 37.8% of the cases.[8]

In our study, the most prevalence PSA level from PA patients most >20 ng/ml (n=170; 90.4%), with a mean PSA of 256 ng/ml. These results are consistent with the findings of Andreas et al (2017), which reported the highest number of cases in the highest PSA category (>20 ng/ml, 49.2%) and the lowest frequency in the PSA range of 0 - 4.0 ng/ml (3.92%).[6] Similarly, Solang et al (2016) demonstrated that PSA levels peaked at >100 ng/ml (50%), with the lowest number of cases observed in the PSA range of <10 ng/ml (8.8%).[9] Notably, PSA levels, while indicative of prostate cancer likelihood, it may elevates in various benign and malignant conditions, necessitating careful consideration in clinical practice.

Regarding the most common procedures, our study indicated that biopsy was the predominant method (n=154, 81.9%), followed by Transurethral Resection of the Prostate (TURP) (n=23, 12.2%), and Prostatectomy (n=11, 5.9%). These findings correspond with those of the study by Prasetya et al, highlighting biopsy as the most frequently used method (n=376, 96.1%), followed by Prostatectomy (n=10, 2.6%), and TURP (n=3, 0.7%).[10] Conversely, the results differ from those of Ulfaningtyas et al (2021), which identified TURP as the most common sampling method (57.14%), followed by biopsy (34.52%), and prostatectomy (5.95%).[11] Additionally, Andreas et al (2017) reported that the majority of PA cases were confirmed using TURP specimens (n=48, 94.12%), with 3 cases (5.88%) diagnosed through biopsy.[6]

In our study, stage IV was the most prevalent among PA patients (n=128, 68.1%). This finding is consistent with the research conducted by Louisa et al, who also found that most cases were classified as stage IV (n=35, 92.1%).[12] These results are aligned with the data presented by Umbas et al, indicating that approximately half of Indonesian patients were diagnosed with metastatic disease during the initial evaluation.[3]

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Regarding the Gleason Score (GS), the majority of PA patients at RSHS exhibited a GS of 9 (n=65, 34.6%). This corresponds with the findings of Prasetya et al, indicating a prevalence of GS 9 (n=163, 41.6%).[10] Similarly, the most common Grade Group (GG) observed in our study was GG 5 (n=84, 44.7%). Similar results were reported by Oktavia et al, Louisa et al, and Prasetya et al, highlighting the dominance of GG 5, with respective proportions of 51.89%, 64.9%, and 46.1%.[7,10,12] In contrast, Ulfaningtyas et al identified GG 4 as the most prevalent (n=25, 29.76%).[11] Furthermore, the Histopathological Grade in our study predominantly indicated poorly differentiated tumors (n=132, 70.2%), aligning with the findings of Oktavia et al, Dany et al, and Ulfaningtyas et al, with proportions of 66.04%, 69.6%, and 54.76%, respectively. [7,8,11]

In our study, bone metastases were the most commonly observed single-site metastatic occurrence, accounting for 55 cases (70.5%). Additionally, liver metastases were identified in 9% of cases, while lung metastases were present in 20.5% of cases (n=16). Notably, metastases to the brain were identified in one case, along with a similar number of cases demonstrating metastasis to multiple organs, including the bone, liver, lung, and non-regional lymph nodes. Gandaglia et al reported that patients with primary bone metastases often exhibited secondary metastases in multiple sites, including the liver, thorax, distant lymph nodes, and brain.[13] Blastic-type bone metastases are common in prostate cancer, driven by growth factors such as Transforming Growth Factor Beta (TGF-beta), Platelet Derived Growth Factor (PDGF), Bone Morphogenetics Protein (BMP), Insulin like Growth Factor (IGF), and Fibroblast Growth Factor (FGF), which enhance osteoblast activity.[14]

CONCLUSION

This study, comprising 188 PA cases from 2016 to 2023 at RSHS, reveals that PA predominantly occurs in the 70-79 years old age group, exhibits PSA levels exceeding 20 ng/ml, is commonly diagnosed via biopsy, frequently presents at stage IV, and often demonstrates a Gleason Score of 9, Grade Group 5, poorly differentiated histopathological grade, and bone metastasis.

REFERENCES

1. Buskin A, Singh P, Lorenz O, Robson C, Strand DW, Heer R. A review of prostate organogenesis and a role for ipsc-derived prostate organoids to study prostate development and disease. Vol. 22, International Journal of Molecular Sciences. MDPI; 2021.p.1-2
2. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021 May;71(3):209–49.
3. Afriansyah A, Hamid ARA, Mochtar CA, Umbas R. Survival analysis and development of a prognostic nomogram for bone-metastatic prostate cancer patients: A single-center experience in Indonesia. International Journal of Urology. 2019 Jan 1;26(1):83–9.
4. Perdana NR, Mochtar CA, Umbas R, Rizal A, Hamid AH. The Risk Factors of Prostate Cancer and Its Prevention: A Literature Review The risk factors of prostate cancer and its prevention. 2016. p.1-2.
5. Rj Bott S, Keng F, Ng L. Prostate Cancer. Australia: Exon.2021. p. 44-50
6. Iqbal Andreas M, Hilbertina N. Gambaran Karsinoma Prostat di RSUP Dr. M. Djamil Padang [Internet]. Vol. 6, Jurnal Kesehatan Andalas. 2017. Available from: http://jurnal.fk.unand.ac.id
7. Oktavia R, Yenita Y. Profil Histopatologik Adenokarsinoma Prostat di Laboratorium Patologi Anatomik Sumatera Barat Tahun 2015-2017. J Kesehat Andalas. 2020; https://doi. org/10.25077/jka.v9i1S.1162
8. Dany YA, Hendri AZ, Soerohardjo I. Prostate cancer profile in Dr. Sardjito General Yogyakarta. Journal of thee Medical Sciences (Berkala Ilmu Kedokteran). 2021 Jul 1;53(3).
9. Solang VR, Monoarfa A, Tjandra F. Profil penderita kanker prostat di RSUP Prof. Dr. R. D. Kandou Manado periode tahun 2013-2015. Vol. 4, Jurnal e-Clinic (eCl). 2016.

P-ISSN 0215-7284
e-ISSN 25279106
Accredited by KEMENRISTEKDIKTI/Sinta-4

10. Rizky Prasetya G, Saraswati M, Rizal AH. Hamid A, BRE. Matondang S. Clinicopathological Profile of Prostate Adenocarcinoma Cases at Cipto Mangunkusumo Hospital in 2010-2019 with Special Overview of Robotic Biopsy. Majalah Patologi Indonesia. 2022 Sep 14;31(3).
11. Ulfaningtyas K, Norahmawati E, Anita KW, Angelina A, Seputra KP. Profil Klinikopatologi Adenokarsinoma Prostat Di Rsud Dr. Saiful Anwar Malang Periode Tahun 2015- 2019: Sebuah Penelitian Retrospektif. Maj Kesehat. 2021; https://doi.org/10.21776/ub.majalahkesehatan.2021.008.02.4
12. Louisa J, Sumadi WJ, Saputra H, Ekawati NP. Profil klinikopatologi karsinoma prostat di Rumah Sakit Umum Pusat Prof. Dr. I.G.N.G. Ngoerah Denpasar periode tahun 2017-2020. Intisari Sains Medis | Intisari Sains Medis [Internet]. 2023;14(1):118–23. Available from: http://isainsmedis.id/
13. Gandaglia G, Abdollah F, Schiffmann J, Trudeau V, Shariat SF, Kim SP, et al. Distribution of metastatic sites in patients with prostate cancer: A population-based analysis. Prostate. 2014 Feb;74(2):210–6.
14. Yudistira, A. *Pendekatan Klinis Tatalaksana Metastasis Tulang Belakang*. Media Nusa Creative (MNC Publishing), 2022. p.