



Gross Hematuria and Prostatic Cancer in Libyan Patients

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Authors' contributions

This work was carried out in collaboration among all authors. Author AE designed the study and author TEID performed the statistical analysis, author RE wrote the protocol and authors AIA and DSS wrote the first draft and final draft of the manuscript. Author WR managed the analyses of the study and managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aim: Gross hematuria due to prostate cancer is an important clinical presentation and it is necessary to collect, analyze and determine certain criteria and data in the diagnosis and management of prostatic cancer. The aim of the present study is to find out the frequency of gross hematuria and to correlate it with gross hematuria and serum Prostatic Specific Antigen (PSA) in prostatic cancer patients.

Materials and Methods: A retrospective study was done in patients diagnosed with prostatic cancer in Hawari center for urology in Benghazi Libya from 2011 up to 2017. 60 cases were taken for the present study. The data such as age of the patient, first complaint such as gross hematuria, serum PSA levels, histopathology result, the types of therapy received (medical or surgical) were analyzed from these Libyan patients.

Results: 25 percent cases in the present study had gross hematuria and there was positive correlation between gross hematuria, serum PSA levels and Gleason score.

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Conclusion: The result of this study indicate that the presentation of hematuria is not uncommon in prostate cancer. Therefore, it may be necessary to estimate serum PSA levels and do digital rectal examination (DRE) for men aged between 50-70 years old for early diagnosis and management of prostate cancer.

Keywords: Prostate cancer; hematuria; PSA; Gleason score.

1. INTRODUCTION

Gross hematuria is one of the clinical findings in patients with prostatic cancer. Prostate cancer is one of the major health problems that affect men's health. Gross hematuria in patients with prostate cancer is, therefore, a finding that needs to be taken into consideration in the diagnosis and management of prostatic cancer patients along with other confounding factors like smoking history, symptoms of infection, stage of the cancer. The present study is undertaken to evaluate the presence and management of gross hematuria in Libyan prostatic cancer patients [1-4].

2. MATERIALS AND METHODS

A retrospective study was done in patients diagnosed with prostatic cancer in Hawari center for urology in Benghazi Libya from 2011 up to 2017. 60 cases were taken for the present study and data such as age of patient, first complaint such as gross hematuria, serum PSA result, histopathology result, the types of therapy received (medical or surgical) were analyzed.

3. RESULTS

The total number of patients included in the present study was 60. Out of 60 patients with prostate cancer the gross hematuria was noticed in 15 patients in this series which is approximately 25% of the patients, while the high PSA level was documented in all the patients.

Table 1. The average age group of prostate cancer patients

| Age group | Number of patients | Percentage % |
|--------------|--------------------|--------------|
| 51-60 years | 4 | 7 % |
| 61-70 years | 23 | 39% |
| 71-80 years | 19 | 32 % |
| 81-90 years | 12 | 20% |
| 91-100 years | 2 | 2% |
| Total | 60 | 100% |

Out of 60 patients 4 of them were between the age 51-60 years (about 7% of patients), 23 patients were between the age of 61-70 years (about 39% of patients). 19 patients were between the age of 71-80 years (about 32%), 12 patients were between the age of 81-90 (about 20%) 2 patients were more than 90 years old (about 2%)

Table 2. Common symptoms observed in patients with prostate cancer

| Symptoms | Number of patients | Percentage % |
|-----------------|--------------------|--------------|
| Gross hematuria | 15 | 25% |
| Urine retention | 5 | 8% |
| Asymptomatic | 25 | 42% |
| Other symptoms | 15 | 25% |
| Total | 60 | 100% |

The number of patients presented with gross hematuria are 15 (about 25%). 25 of patients (about 42%) are asymptomatic, 15 patients (25%) presented with other symptoms like voiding discomfort, symptom of bone metastasis) and 5 patients (8%) had urine retention as complaints.

Table 3. Gross hematuria associated with high PSA at presentation

| | Number of patients | percentage |
|-----------------|--------------------|------------|
| Gross hematuria | 15 | 25% |
| High PSA | 60 | 100% |

Out of 60 patients about 25% of patients had gross hematuria and are associated with high PSA at the time of initial presentation of prostate cancer and showed positive correlation with high PSA using Spearman's rank of correlation ($R_s = 0.116$).

The highest reading of PSA is 1787 ng/ml and the lowest reading is 6.6 ng/ml. The mean PSA level was 15 ng/ml (SD =4.06).

22 of patients had a Gleason score from 2-6(36%), 8 of patients have Gleason score

7(14%),30 of patient the Gleason score was between 8-10 (50%) the most common Gleason score in this study was (4+5) 9.

High PSA level are associated with high Gleason score.

More than 63% of patients require surgical intervention, i.e. more than 43% of patients had TUR-P for management of hematuria, more than 20% of patients underwent surgical castration and more than 27% of patient received hormonal therapy,6% of patients received radiotherapy and two cases underwent radical prostatectomy.

4. DISCUSSION

Prostate cancer is the second most common malignancy affecting men aged 50-70 years. This tumor is highly aggressive when detected late and has poor prognosis. [1-3]. Therefore, early screening of men with gross hematuria for prostatic cancer may help early detection and treatment. It was found that more than 25% of the patients diagnosed with prostate cancer had gross hematuria. The hematuria was due to prostate bleeding. [3] Cystoscopy, trans-rectal prostatic biopsy, transurethral resection of the prostate (TURP) histopathological findings were carried out for the diagnosis in most of cases [3].

Most of the patients had high PSA (>6.5 ng/ml) and therefore, PSA screening was included for early detection and monitoring management of prostate cancer. Various treatment for gross hematuria in prostate cancer patients were suggested which included medical and surgical management such as hormonal manipulation, TUR-P, radiotherapy and radical prostatectomy. [4-6].

In 64% of the patients a significant correlation between histopathology findings (with high Gleason score) and serum PSA levels. [7-9] were observed. Gross hematuria was reported to be more in elderly patients which affected their quality of life. [4-6].

The mean age of patient in our study was 73 and in other study 74.3. In our study more than 63% of patient required surgical intervention for management of hematuria as compared to the other study reported by Ofer et al. (2013) [3].

In our study, all patients who had bone metastasis had a PSA value of > 20 ng/mL, and in only 1 patient (0.46%) with bone metastasis PSA concentration was around 50 ng/mL. There was no statistically significant correlation between PSA level and tumor grading by Gleason score and between Gleason score and bone metastasis in other studies reported [4,6-8]. Bannakij et al. (2014) [9] had reported that there was a significant correlation between PSA level and Gleason score in prostatic cancer with bone metastasis. In our study also there was a significant correlation between PSA levels, Gleason score in prostatic cancer with bone metastasis. Further larger studies need to be carried out to evaluate to support ours and others findings of role of PSA, Gleason score in prostatic cancer with or without bone cancer.

The finding of high PSA levels in Libyan prostate cancer patients in our study and other studies supports the recommendation that serum PSA level should be checked in every patient above 50 years old for early detection and management prostate cancer.

Table 4. Serum PSA level in prostatic cancer patients

| PSA | Numberof patients | Percentages % |
|----------------------|-------------------|---------------|
| Between 4-10 ng/ml | 9 | 16% |
| Between 10-20 ng/ml | 14 | 23% |
| Between 20-50 ng /ml | 17 | 28% |
| More than 50 ng/ml | 20 | 33% |
| Total | 60 | 100% |

Table 5. Histopathology result and gleason score

| Gleason score | Number of patients | Percentage % |
|---------------|--------------------|--------------|
| 2-6 | 22 | 36% |
| 7 | 8 | 14% |
| 8-10 | 30 | 50% |
| Total | 60 | 100% |

Table 6. Relationship between serum PSA levels and gleason score

| Serum PSA | Low gleason score (2-6)no % | High gleason score (710)no % | Total |
|--------------|-----------------------------|------------------------------|------------------|
| 4-10ng/mL | 4 6.6 % | 5 8.3 % | 9-(15%) |
| 10-20ng/mL | 6 10% | 8 13.3 % | 14-(23.3%) |
| 20-50ng/mL | 5 8.3% | 12 20 % | 17-(28.3%) |
| >50ng/mL | 7 11.6% | 13 21.6 % | 20-(33.3%) |
| Total | 22 36.6% | 38 63.3 % | 60-(100%) |

Table 7. Management used for prostate cancer

| Type of management | Number of patients | Percentage |
|-----------------------|--------------------|-------------|
| TUR-P | 26 | 43% |
| Surgical castration | 12 | 20% |
| Hormonal therapy | 16 | 27% |
| Radical prostatectomy | 2 | 3.3% |
| Radiotherapy | 4 | 6.7% |
| Total | 60 | 100% |

TURP- trans urethral resection of the prostate

5. CONCLUSION

1. Complete investigation of any patient admitted with gross painless hematuria must be indicated to rule out prostate cancer.
2. There is a need for screening of PSA and DRE for men aged from 50-70 years old for early diagnosis and management of prostate cancer.
3. Prostate cancer is sometimes symptomatic disease and gross hematuria is not uncommon presentation in prostatic cancer patients.
4. The most common diagnostic modality for prostate cancer is currently trans-rectal ultrasound with guided biopsy.
5. Medical treatment can be effective in some cases.
6. Diagnosis of gross hematuria can be accomplished in most cases by cystoscopy. The management of these patients was difficult. Transurethral surgical intervention is often needed. Surgery is very effective in controlling gross hematuria.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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