INTRODUCTION

- Prostate cancer is evolving in terms of diagnosis and management.
- With widespread propagation of PSA in detection of prostate cancer, DRE has become oblivious.
- Abnormal DRE is associated with prostate cancer in the setting of elevated PSA, however the role of DRE in the setting of normal PSA remained understudied.
- TRUS-guided prostate biopsy is the vital element in diagnosis of prostate cancer.
- In our study, we analysed detection rate of prostate cancer on contemporary 12-core TRUS biopsy in men with either suspicious DRE and/or PSA ≥4 ng/ml.

MATERIALS AND METHODS

It was an institution based, retrospective observational study conducted in department of urology, Institute of Post Graduate Medical Education & Research, Kolkata

AIM OF THE STUDY:
To evaluate detection rate of prostate cancer by digital rectal examination (DRE) and serum prostate-specific antigen (PSA) levels following by standard 12-core transrectal ultrasound (TRUS) guided prostate biopsy.

STUDY PERIOD: May 2012 to February 2020

METHODOLOGY:
After screening of patients presenting with LUTS with DRE and Serum PSA level we enrolled patients for TRUS guided 12-core prostate biopsy. Indications included PSA level ≥4 ng/ml and/or suspicious DRE findings. Retrospective analysis was done to find out correlation between suspicious rectal examination and various serum PSA levels in detection of cancer prostate

RESULTS

- Table 1: Characteristic of study population.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Total</th>
<th>Positive for carcinoma</th>
<th>Negative for carcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients, n(%)</td>
<td>823</td>
<td>330 (40.0)</td>
<td>493 (59.0)</td>
</tr>
<tr>
<td>Age (mean in years ± SD)</td>
<td>65.2±10.22</td>
<td>60.25±16.64</td>
<td>64.34±9.95</td>
</tr>
<tr>
<td>DRE findings</td>
<td>342(41.55)</td>
<td>273(30.79)</td>
<td></td>
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<tr>
<td>Serum PSA (median in ng/ml: SD)</td>
<td>481(194.48)</td>
<td>253(121.23)</td>
<td></td>
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<tr>
<td>Gleason Score (Mean-SD)</td>
<td>7.5±5.02</td>
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</tbody>
</table>

- Table 2: Characteristic of DRE at various serum PSA levels for overall prostate cancer detection rate on biopsy.

<table>
<thead>
<tr>
<th>Serum PSA level</th>
<th>Suspicious DRE</th>
<th>Number</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive</th>
<th>Predictive</th>
<th>Negative</th>
<th>Predictive</th>
<th>Positive value (%)</th>
<th>Negative value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 ng/ml</td>
<td>64</td>
<td>--</td>
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<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>0.5-4 ng/ml</td>
<td>45</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>4-10 ng/ml</td>
<td>306</td>
<td>76.17</td>
<td>70.17</td>
<td>43.93</td>
<td>56.93</td>
<td>--</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>10-20 ng/ml</td>
<td>304</td>
<td>73.14</td>
<td>77.87</td>
<td>54.41</td>
<td>88.13</td>
<td>--</td>
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<td>--</td>
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<td>--</td>
</tr>
<tr>
<td>&gt;20 ng/ml</td>
<td>38</td>
<td>72.41</td>
<td>87.25</td>
<td>50.81</td>
<td>79.17</td>
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</table>

Conclusions:

- PSA alone detected cancer in 83% (n=281) of patients.
- Of the patients with abnormal DRE, 83% (n=52) were biopsied.
- Of those biopsied, 83% (n=45) had cancer.

DISCUSSION

- Early stage detection is the goal of every cancer screening test.
- Current established detection methods of prostate cancer include DRE, serum PSA and TRUS-guided prostate biopsy using a systematic 12-core method; however, one aspect of prostate cancer screening that remains unsettled is the role of digital rectal examination.
- Multiple studies and guidelines give conflicting opinions regarding use of DRE as a screening tool.
- Most guidelines use PSA ≥4 ng/ml for prostate cancer screening.
- In lack of consensus regarding the utility of DRE for prostate cancer screening, we evaluated the relationship between PSA and DRE from our institutes.
- Our study demonstrated that detection of tumours by DRE was significantly higher (52.18%) than by PSA (45.46%). Among positive biopsy patients, 5.75%were detected by digital rectal examination alone when serum PSA level was normal (less than 4).
- The positive predictive value was 45.46% when PSA was elevated and 52.18% when digital rectal examination was suspicious and 67.83% when both tests were used in combination.

CONCLUSION

- Suspicious DRE was significantly associated with detection of prostate cancer across all PSA levels.
- Patients with PSA ≥4 can harbour prostate malignancy and such cases can be detected by use of DRE in screening of all patients.
- PSA and digital rectal examination should be used in combination for screening to increase detection of prostate cancer.

REFERENCES