Correlation of serum PSA levels with Gleason score in patients with prostatic Adenocarcinoma

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Abstract

In order to see a relationship between gleason scores on histopathology and PSA levels, group of 200 men were studied which included obtaining there cumulative Gleason score and serum PSA levels before surgical intervention. Two groups were obtained, 178 cases with high (6-10) and 22 with low (2-5) Gleason score. Mean S.PSA levels in patients with high gleason score was 128ng/ml (normal range 0 to 5) and mean PSA levels for patients with low scores was 25ng/ml. The group with high gleason score showed greater increase in serum PSA levels than lower gleason score.

Keywords: serum PSA, Gleason, prostatic Adenocarcinoma

Introduction

Prostate cancer is one of the most common cancers in males. Prostate cancer tends to develop after the age of fifty in men that are generally slow growing. Although two-third cases of prostate cancers are slow growing, there are some cases of aggressive prostate cancers. Primarily, surgery, radiation therapy, and proton beam therapy are the current treatment options of prostate cancer. Also the choice of treatment depends on the stages of the disease progression, the level of prostate specific antigen (PSA), the Gleason score [1]. Biological activity of prostate cancer relates to its histological appearance. Histological appearance is graded as: well, moderately well, and poorly differentiated2 Gleason's grading system is widely used [3, 4] and correlates well with mortality or morbidity including prediction of skeletal metastasis [5]. Prostate specific antigen (PSA) and prostate acid phosphatase (PAP), tumor markers of prostate carcinoma, have been used to confirm diagnosis and to monitor therapy of prostate carcinoma [6-9].

Materials and Methods

This study was conducted in post graduate department of pathology, GMC Srinagar from January 2019 to January 2020 and consisted of 200 cases. The mean age was between 60 to 85 years. Clinical evaluation, S.PSA levels were evaluated for all these cases which were obtained.

Result

Patients Gleason score were obtained and two groups obtained, 178 cases with high (6-10) and 22 with low (2-5) Gleason score. Mean S.PSA levels in patients with high Gleason score was 128ng/ml (normal range 0 to 5) and mean PSA levels for patients with low scores was 25ng/ml.

<table>
<thead>
<tr>
<th>Gleason score</th>
<th>Number of patients</th>
<th>PSA Levels (ng/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3+3</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>3+4</td>
<td>20</td>
<td>48</td>
</tr>
<tr>
<td>4+3</td>
<td>30</td>
<td>56</td>
</tr>
<tr>
<td>4+4</td>
<td>15</td>
<td>70</td>
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<tr>
<td>4+5</td>
<td>3</td>
<td>85</td>
</tr>
<tr>
<td>5+5</td>
<td>2</td>
<td>105</td>
</tr>
</tbody>
</table>

Table 1: Patients Gleason score were obtained and two groups obtained
testing is concerned with the risk of over diagnosis. PSA can be elevated in other conditions like benign prostatic hyperplasia, prostate manipulations and prostatitis [13].

Morgan et al. [16] studied age specific range of PSA in 411 black men with PSA cut off of 4ng/ml. They found 40% of cancer would be missed with the use of traditional cut off value. In men aged >50 the possibility of prostate cancer in patients with serum PSA levels of 2.5-4ng/ml >4ng/ml and >10ng/ml was 27%, 20-30% and 42-64% respectively.

In our study we found out that there was no determined cut off value for PSA as in our study in patients with psa levels > 50 about 25% were negative for malignancy and in patients with high PSA levels (>100 ng/ml), 3% patients were negative for malignancy. Therefore no exact cut off value could be determined for diagnosis of malignancy so we conclude from our study that HPE remains the gold standard for diagnosis of prostatic adenocarcinoma. PSA levels can be used as a prognostic marker and an adjuvant method for diagnosis and routine screening.

**Conclusion**

The results of this study indicate that Gleason score and PSA level measurements correlates significantly for prostatic adenocarcinoma.

**References**