

## **THE INSULIN RESISTANCE ASSOCIATES WITH THE CLINICOPATHOLOGICAL CHARACTERISTICS OF PROSTATE CANCER**

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**Objectives:** Insulin resistance and hyperinsulinemia have been hypothesized to increase the risk of prostate cancer. However their influences on clinicopathologic characteristics and the prognosis of prostate cancer have not yet been identified. The aim of this study was to evaluate the insulin resistance in patients undergoing radical prostatectomy for organ-confined (pT2) and locally advanced prostate cancer.

**Materials and Methods:** Subjects were recruited from 171 prostate cancer patients who underwent radical prostatectomy. Patients having diabetes mellitus, taking testosterone or anti-androgen agent were excluded. Body mass index, fasting serum glucose, insulin and testosterone were investigated preoperatively. Patients were divided into organ confined (pT2, N0, M0) and locally advanced group (pT3 or 4, N0-2, M0) according to pathological staging. Insulin resistance and pancreatic beta-cell function were measured by using the homeostasis model assessment-insulin resistance (HOMA-IR) and HOMA-beta, respectively.

**Results:** The patients with organ confined and locally advanced disease were 103 and 68, respectively. The mean age, body mass index, fasting glucose and testosterone level were not different between two groups. The frequencies of positive surgical margin and Gleason score were higher in locally advanced group than organ confined group (41% vs 4%,  $p = 0.012$  and  $7.7 \pm 0.8$  vs  $7.2 \pm 0.8$ ,  $p=0.001$ , respectively). Serum insulin concentration and HOMA-IR were elevated in locally advanced group than those in organ confined group ( $15.1 \pm 11.9$  vs  $10.1 \pm 6.9$ ,  $p = 0.001$  and  $4.1 \pm 3.4$  vs  $3.0 \pm 2.3$ ,  $p = 0.019$ , respectively). However, HOMA-beta was higher in organ confined patients compared to locally advanced patients ( $4.2 \pm 1.5$  vs  $2.4 \pm 1.4$ ,  $p = 0.007$ ).

**Conclusions:** Patients with a preoperative insulin resistance have a higher risk of locally advanced prostate cancer. The present study shows that the HOMA-IR & HOMA beta-cell could be useful prognosticators for assessing the aggressiveness of prostate cancer in preoperatively.