Follicle-Stimulating Hormone (FSH) Correlates Pathologically Invasiveness of Prostate Cancer

Introduction and Objectives: Previously we showed that the serum testosterone and follicle-stimulating hormone (FSH) level estimated patient risk for high-grade prostate cancer in prostate biopsied sample. In this study, we assessed if the serum level of FSH can be preoperative variables to predict the tumor size and extraprostatic extension before radical prostatectomy.
Materials and Methods: We identified 130 patients who underwent radical prostatectomy for biopsy proven T1c-T2N0M0 cancer between 2003 and 2008. To predict extraprostatic extension and tumor size, logistic regression analysis and linear regression analysis was performed using serum level of PSA, Luteinizing Hormone (LH) and FSH, testosterone and biopsy findings. Recurrence was defined as a double PSA level of >0.2 ng/ml after radical prostatectomy.
Results: Organ confined cancer was pathologically confirmed in 109 of 130 patients (83.9%). PSA recurrence was detected in 42 of 130 patients (32.3%) after radical prostatectomy. In the univariate model, FSH was significantly associated with extraprostatic extension (p=0.01) and tumor size (p=0.03). However, age, PSA level, Gleason score, positive cores of biopsy and serum testosterone level were not independent predictors of extraprostatic extension and PSA recurrence.
Conclusion: Recently, the selective expression of the FSH receptor on the surface of the blood vessels of prostate cancer was reported. The binding FSH to FSH receptors in prostate cancer cells may induce the angiogenesis surrounding prostate tumors. The measurement of FSH in the serum of patients with prostate cancer might provide clinically relevant information on the extraprostatic spread and decrease the risk of inadequate cancer control.