

This abstract was presented during the past 22nd Annual EAU Congress, Berlin, 21-24 March 2007

Session: **Prostate cancer: Staging 2**

Date: **Friday March 23, 2007 from 15:45 to 17:15**

Room: **Room 11A**

Correlation of biopsy Gleason scores obtained in community settings with the Gleason scores of corresponding prostatectomy specimens in the period from 1997 to 2006

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Introduction & Objectives:

The accurate determination of biopsy Gleason scores is crucial for making correct therapeutic decisions in patients with prostate carcinoma. The study was proposed to determine the correlation of biopsy Gleason scores obtained in community settings with the Gleason scores of the corresponding prostatectomy specimens.

Material & Methods:

Our study population consisted of 970 patients with prostate carcinoma proven by needle biopsy who underwent radical retropubic prostatectomy between June 1997 and August 2006. None of the patients had received previous hormonal treatment. The processing of prostatectomy specimens was standardized and all findings were confirmed by a single experienced uropathologist. The biopsy and post-prostatectomy Gleason scores were divided into four categories (2-4, 5-6, 7, 8-10). The concordance of biopsy and post-prostatectomy Gleason scores was calculated using Cohen's kappa-coefficient. The study was retrospective and based on data taken from a prostate carcinoma database.

Results:

The concordance of biopsy and post-prostatectomy Gleason scores is shown in the table. The degree of agreement between the biopsy samples and radical prostatectomy specimens determined via kappa statistics was 0.19 (95% CI 0.15-0.24), which is rather low. The high number of patients with biopsy Gleason scores 2-4 which were upgraded to ≥ 7 following histological examination of the surgical specimens was striking. The concordance in the Gleason score categories 5-6, 7 and 8-10 was 63.4%, 52.2% and 57.9%, respectively. Biopsy Gleason scores in categories 5-6 and 7 were

upgraded in 36.3% and 18.1%, respectively, of cases, whereas scores in Categories 5-6, 7 and 8-10 were downgraded in 0.4%, 29.7% and 42.1%, respectively, of cases.

Biopsy Gleason Score [n]	Post-prostatectomy Gleason Score [n]				Total [n (%)]
	2 -4	5-6	7	8 -10	
2-4	4	132	46	12	194 (20.0)
5 -6	2	344	164	33	543 (56.0)
7	1	40	72	25	138 (14.2)
8 -10	1	20	19	55	95 (9.8)
Total [n (%)]	8 (0.8)	536 (55.3)	301 (31.0)	125 (12.9)	970

Conclusions:

The concordance of biopsy Gleason scores obtained in community settings and the Gleason scores for the corresponding radical prostatectomy specimens was astonishing low in our study population. A substantial number of biopsy Gleason scores were upgraded or downgraded following histological examination of the surgical specimens. The results of this study indicate that unconfirmed biopsy Gleason scores obtained in community settings are not a reliable basis for making treatment decisions in patients with prostate carcinoma.