



Correlation of Gleason score in prostate biopsy and final specimen in 2000-2012

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Aim : Assessment of the correlation between biopsy (bGS) and pathological (pGS) Gleason score in years 2000-2012 and difference in the evaluation of bGS at central or referring department.

Material and methods: Between 2000 and 2012 we have performed a total of 1028 radical prostatectomies at our department. Patients with neoadjuvant hormonal therapy (n=63), unreported bGS or pGS (n=23), pT0 classification (n=14) and time to surgery longer than one year (n=23) were excluded. In all patients, the bGS and pGS was known, as well as evaluating department and in the case of the General Teaching Hospital the name of the reporting pathologist. Parameters were analysed using contingency tables and Chi-square test, differences by the year of the examination were assessed by nonparametric ANOVA.

Fig. 1. Differences in biopsy GS in the whole study group regardless of evaluating department (based on the year of surgery)

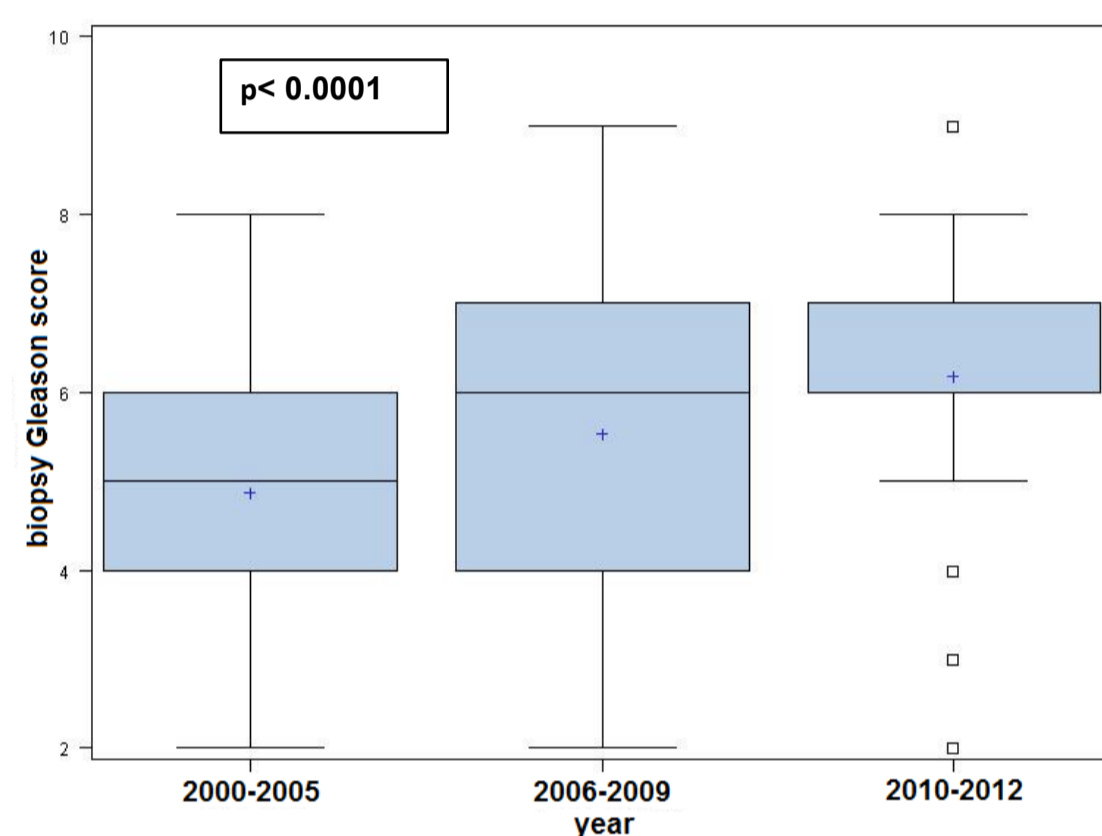


Fig. 2. Differences in biopsy GS between Dpt. of Pathology of General Teaching Hospital in Prague and other referring departments (based on the year of surgery)

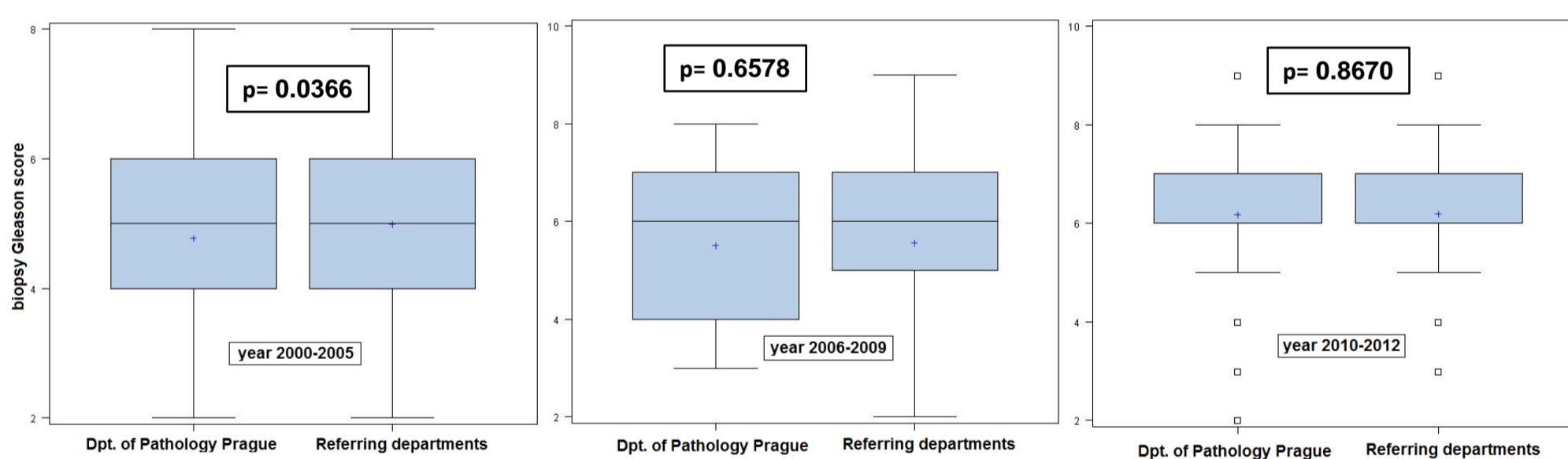


Table 1. Concordance in bGS and pGS according to the evaluating pathologist

	N	Δ in GS	Δ in Gmax
Same pathologist	28	0.6735	0.4919
Different pathologist	288		

p-value

Δ in GS - change in bGS and pGS, Δ in Gmax - change in maximal Gleason grade

Table 2. Change in the bGS and pGS in the whole cohort (905 cases)

	N	%	Δ GS	N
Downgrading	147	16,2	-4	2
			-3	10
			-2	30
			-1	105
Equal Gleason	384	42,4		
Upgrading	374	41,3	+1	213
			+2	107
			+3	31
			+4	17
			+5	4
			+6	2

bGS - biopsy Gleason score, pGS - surgical specimen Gleason score
 Δ GS is an absolute change in Gleason score (example : +5 means bGS = 2 \rightarrow pGS = 7)

Table 3. Change of the risk group based on the change of bGS and pGS

biopsy	\rightarrow	RP specimen	N	Total	%
Low	\rightarrow	intermediate	140	683	20,5
Low	\rightarrow	high	33	683	4,8
Intermediate	\rightarrow	high	29	171	16,9
Intermediate	\rightarrow	low	38	171	22,2
High	\rightarrow	intermediate	18	51	35,3
High	\rightarrow	low	7	51	13,7

bGS - biopsy Gleason score, pGS - postsurgical Gleason score, RP - radical prostatectomy

Results : We evaluated a total of 912 patients, median bGS and pGS was 6 (2-9), pGS reached significantly higher values ($p < 0.0001$). Gradual increase in the value of bGS has been shown in 2000-2012, the most significant difference was observed between periods 2000-2007 and 2008-2012 ($p < 0.0001$). Altogether no difference was shown between the evaluation of bGS at our department and at referring hospitals. Only in period 2000-2005 bGS was significantly higher ($p = 0.0366$) at our department. In 384 patients (42.4%) bGS and pGS were identical and in 374 cases (41.3%) bGS was underestimated. Greater differences in the evaluation of bGS and pGS were seen in biopsies performed at other departments ($p < 0.0001$). Evaluation of both specimens with the same pathologist did not affect the difference between the bGS and pGS ($p = 0.6735$).

Conclusion : Modification ISUP 2005 applies equally in the assessment of bGS at different departments, beginning from 2008. The absolute difference between the bGS and pGS does not correlate with changes in the risk of disease.