

CYTOKERATINS IN LUNG CANCER



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Aim of study

- To evaluate the diagnostic importance of MonoTotal and to compare it with cytokeratin tumor markers conventionally used in patients with NSCLC.

Characteristics of cytokeratin tumor markers

Tumor marker	Abbr.	Cytokeratin fragment
MonoTotal	MT	8, 18, 19
Tissue specific polypeptide antigen	TPS	18 (concerning M3)
Tissue polypeptide antigen	TPA	8, 18, 19
Fragment of cytokeratin	CYFRA 21-1	19



Groups of patients

Cancer group

- 125 patients with NSCLC , stage I – III, operated at Dept. of Surgery, Faculty Hospital Pilsen
 - 38 patients with adenocarcinoma (NSCLC A)
 - 87 patients with squamous cell carcinoma (NSCLC Sq)

Control group

- 54 healthy individuals



Methods

	Methods	Producer	Units	Cut-off
MT	IRMA	IDL	IU/L	78
TPS	IRMA	IDL	IU/L	90
TPA	IRMA	DiaSorin	IU/L	80
CYFRA 21.1	TRACE	Brahms	µg/L	2.5

Descriptive statistics of individual groups

Group	Median (min – max)			
	MT	TPS	TPA	CYFRA 21-1
Control (C)	65 (26-125)	45 (0-146)	39 (0 -100)	1 (0.1-2.4)
NSCLC (Sq)	187*** (24-108)	102** (10-277)	105*** (10-290)	5*** (0.9-65)
NSCLC (A)	109* (10-269)	44 (10-146)	41 (11-174)	1 (0.4-7.5)

Significant difference versus control group

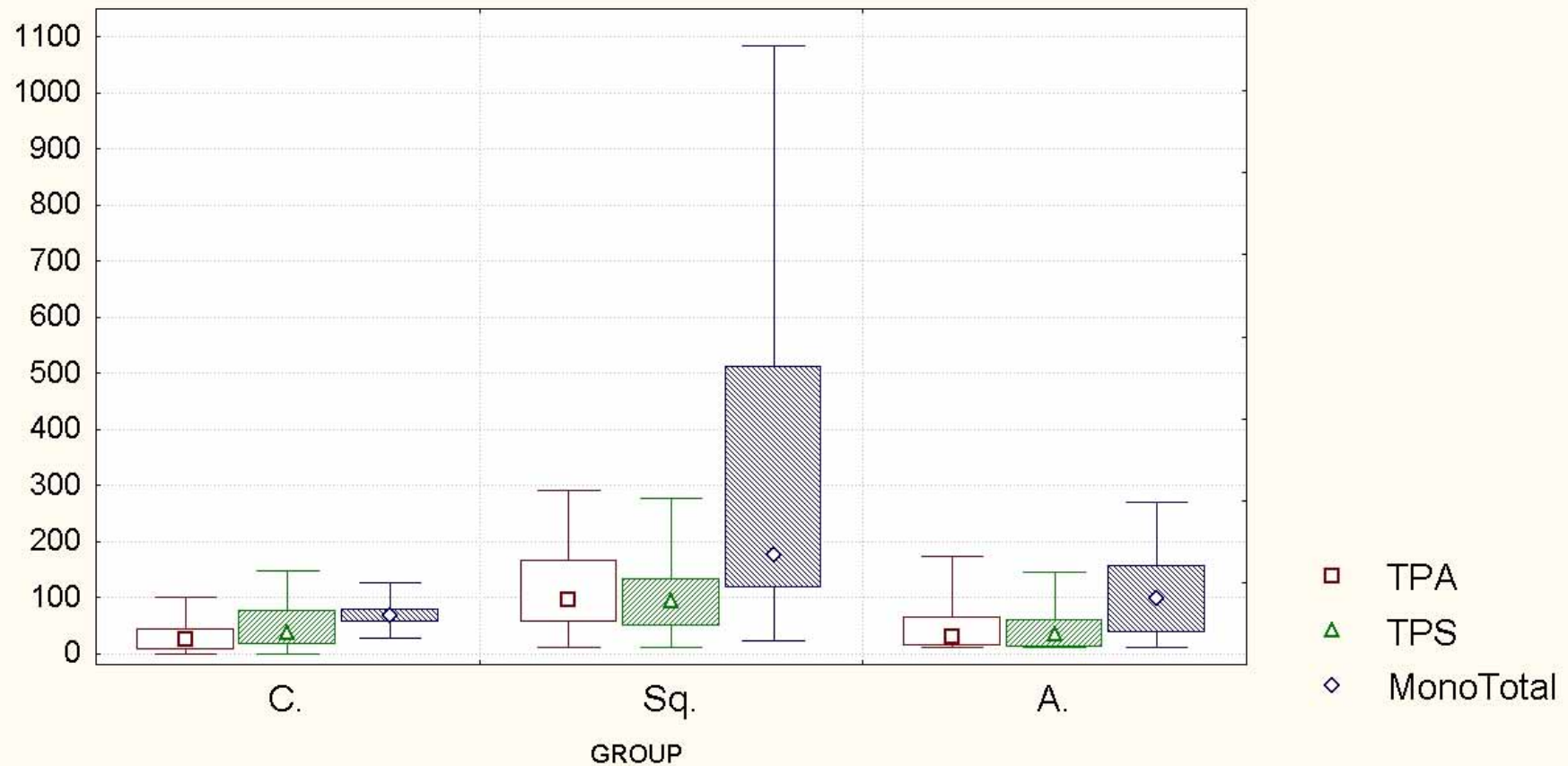
*** p < 0.001

** p < 0.01

* p < 0.05

Serum levels of cytokeratin

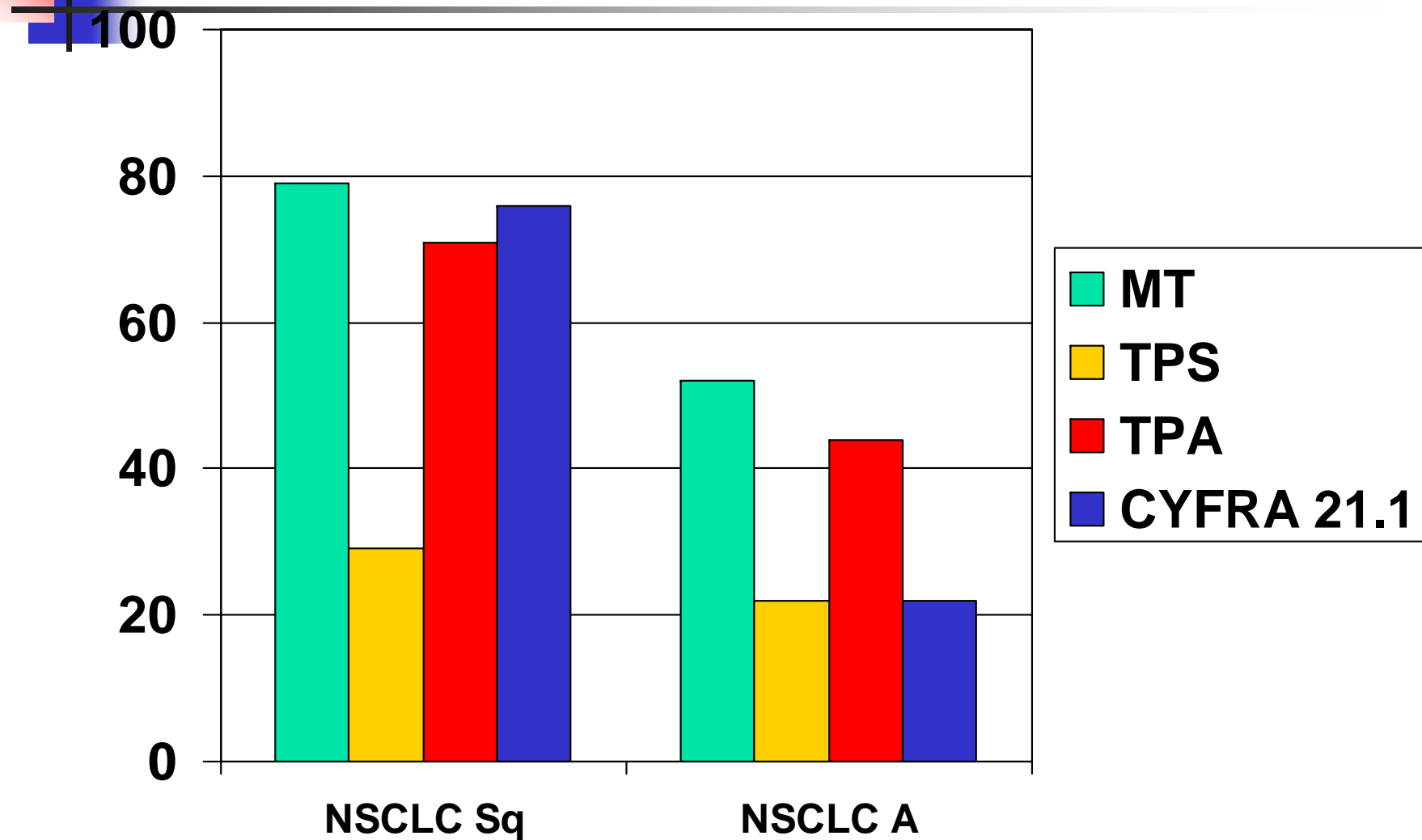
BOX PLOT



Sensitivities according to histological types of NSCLC at 95% specificity

Tumor Marker	NSCLC Sq		NSCLC A	
	Sensitivity (95% spec.)	AUC ROC curve	Sensitivity (95% spec.)	AUC ROC curve
MT	79	0.9193	52	0.6874
TPS	29	0.6764	22	0.4351
TPA	71	0.8137	44	0.6018
CYFRA 21-1	76	0.8860	22	0.6111

Sensitivities of tumor markers for NSCLC





Conclusion

MonoTotal

- Significantly higher values in sera (in comparison with other cytokeratins)
- More sensitive than other conventionally used cytokeratin tumor markers
- Especially higher values and high sensitivity is in squamous cell carcinoma