

THE EFFECT OF THE TRIMPROB ON PATIENT POPULATION SELECTED FOR PROSTATE BIOPSY AND BIOPSY OUTCOME

A. Stoppacciaro, A. Tubaro¹, C. De Nunzio¹, C. Bellorofonte², E. Austoni², L. Miano¹.

Departments of Pathology and ¹Urology, Sant'Andrea Hospital, Rome, Italy. ²Department of Urology, S. Giuseppe Hospital, Milan, Italy.

Introduction

The evaluation of tissue anisotropy may well result into a major breakthrough in the early diagnosis of prostate cancer. The TRIMprob equipment (Galileo Avionica. Turin, Italy) became available in our outpatient clinic in the spring of 2004 and since then it has been routinely used in our prostate unit. The objective of this study is twofold: to test the hypothesis that the use of the TRIMprob could change the population of patients selected for early diagnosis of prostate cancer and the outcome of prostate biopsy.

Methods

Transrectal prostate biopsy was performed with local anaesthesia using a 16 g needle (Magnum, Bard) under ultrasound guidance (Hawk, B-K Medical). Ten to 12 biopsies were performed. Indications for prostate biopsy before the TRIMprob was introduced included total PSA value of 4.0 ng/ml or greater and/or abnormal DRE. After the TRIMprob was available, a positive TRIMprob test (intensity of the 930 MHz signal <50 units) was used as an independent indication for biopsy in addition to PSA and DRE criteria.

Pathology reports relative to a consecutive series of prostate biopsies performed in our outpatient clinic between January 2003 and September 2004 were reviewed. Diagnosis were categorised as: benign prostatic hyperplasia, prostatitis, atrophy, high grade prostate intraepithelial neoplasia (HGPIN), prostate cancer. Biopsies in which the number of prostate glands showing neoplastic transformation were not sufficient for diagnosis were categorised as indefinite and kept apart.

Results

Reports of 352 biopsies were evaluable. A significant change in the total PSA values of patients submitted to prostate biopsy (from 12.3 to 9.2 ng/ml - table I) and in the outcome of prostate biopsy (table II) was observed after the TRIMprob was introduced. In particular the percentage of negative biopsies was reduced from 27 to 15.6%, the percentage of preneoplastic lesions increased from 23.6 to 41.1%, the percentage of prostate cancer decreased slightly from 46.4 to 40.4%.

Table I	N.	Age (years)	Total PSA (ng/ml)	Free PSA (ng/ml)	Free/total PSA ratio
All pts.	352	66.2	9.8	1.5	0.17
Pre TRIMprob	211	65.8	12.3	1.6	0.16
After TRIMprob	141	65.5	9.2	1.5	0.18
p<		0.17	0.006	0.678	0.991

Table II	BPH	Prostatitis	Atrophy	HGPIN	Cancer	Indefinite
Pre TRIMprob	7.1%	19.9%	11.8%	11.8%	46.4%	2.8%
After TRIMprob	2.8%	12.8%	25.5%	15.6%	40.4%	2.8%

Conclusions

Evaluation of tissue anisotropy with the TRIMprob resulted in the selection of a different patient population for prostate biopsy. We were impressed by the reduction of negative biopsies and the significant increase in the detection of HGPIN. Of particular interest is the doubling rate of atrophy, that based on new evidences has been proposed as cancer promoting lesion. The slight decrease in the number of prostate cancer is in line with the reduction of total PSA values in the population. We believe that the introduction of the TRIMprob in the early diagnosis of prostate cancer may open the post-PSA era.