Significance of atypical small acinar proliferation and extensive high-grade prostatic intraepithelial neoplasm in clinical practice

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Introduction. Prostate cancer (PCa) is one of the most commonly diagnosed neoplasms in elderly men. The precancerous lesion of PCa is considered a high-grade prostate intraepithelial neoplasm (HG-PIN), while atypical small acinar proliferation (ASAP) is commonly considered as an under-diagnosed cancer.

Objectives. The aim of the study was to establish the impact of ASAP and extensive HG-PIN on pre-biopsy prostatespecific antigen (PSA) levels and the risk of cancer development in subsequent biopseis.

Material and methods. The 1,010 men suspected for PCa were included in the study based on elevated PSA, and/or positive rectal examination. Transrectal ultrasound (TRUS) guided 10 core biopsy was performed. In those with extensive HG-PIN or ASAP on the first biopsy, and/or elevated PSA value, a second biopsy was performed.

Results. In the second biopsy, PCa was diagnosed in 6 of 19 patients (31.57%) with extensive HG-PIN, in four of 40 (10%) with BPH, and in 4 of 18 (22.22%) with ASAP. There was a statistically significant difference between the values of PSA in the group of patients with ASAP in comparison to those with benign prostate hyperplasia (BPH) ($p = 0.005$) as well as in patients with HG-PIN in comparison to BPH ($p = 0.02$).

Conclusions. A precancerous lesion diagnosed upon biopsy causes a statistically significant increase in the values of PSA in relation to BPH, as well as in the case of ASAP and extensive HG-PIN. The estimate of risk of PCa diagnosis in patients with ASAP and those with extensive HG-PIN in the first biopsy is comparable, which is why there are no reasons for different treatment of patients with the above-mentioned diagnoses. Both should be subjected to urgent second biopsy in around the 4-6 weeks following the initial biopsy.

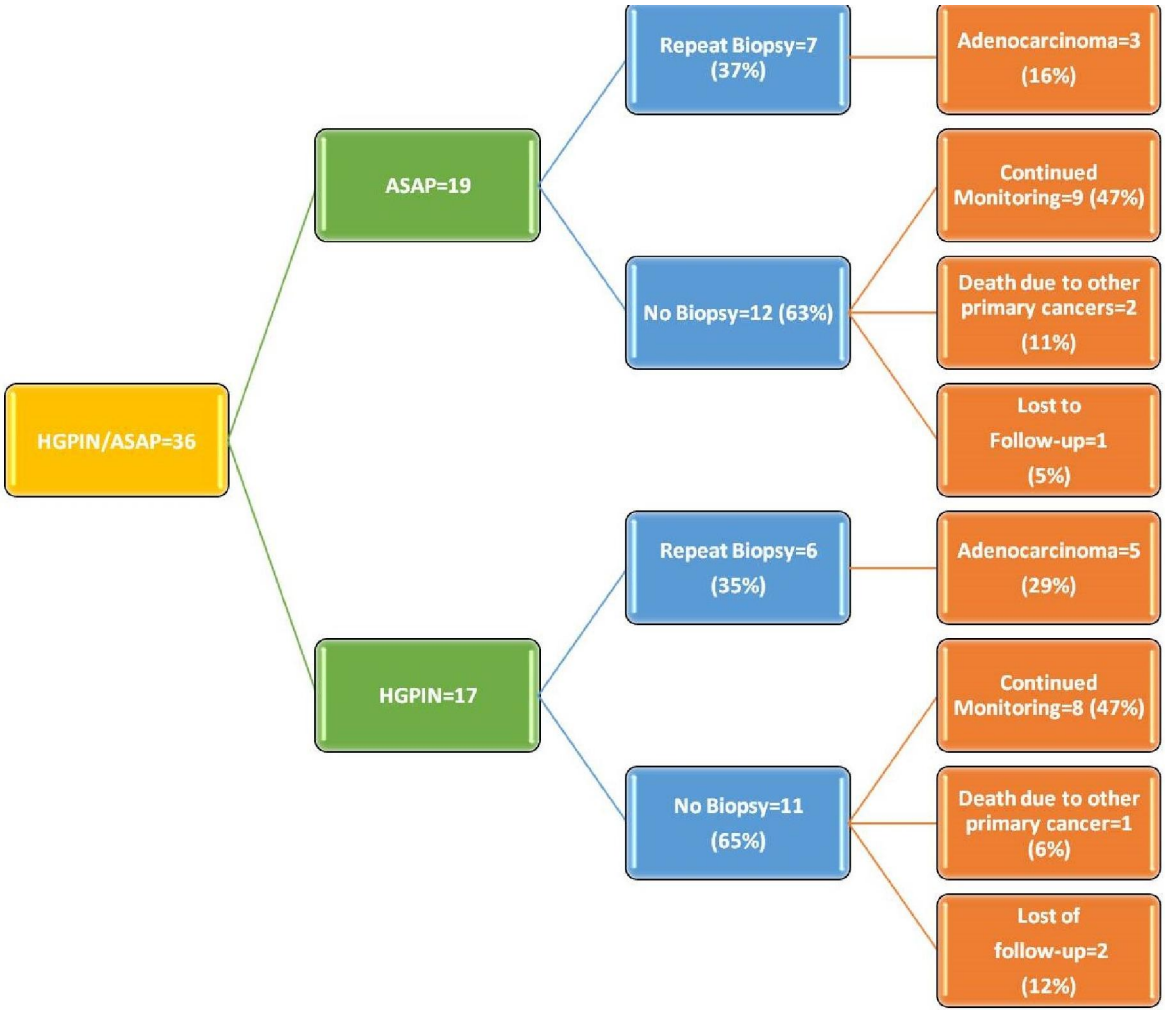
ATTACHED TABLES:

1. Table.docx
Demographic and clinico-pathological characteristics of patients with atypical small acinar proliferation [ASAP] [n=19] and high-grade prostatic intra-epithelial neoplasia [HGPIN] [n=17] on initial biopsy.

Table 1

	ASAP (n=19)	**HGPIN (n=17)**
Age, mean (range)	65.8 (44-80)	70.9(58-84)
PSA at initial biopsy (ng/ml), median (range)	8 (1.1-35)	6(2-15.3)
Free/ total PSA at initial biopsy (%), median (range)	15 (5-24)	15(5-18)
Prostate volume (cm^3), mean (range)	46.17 (17.3-110)	43.50 (20.8-62)
Abnormal DRE, mean (%)	8 (42)	5 (29)
Number of cores at initial biopsy, median (range)	13(10-31)	16(9-26)
Number of positive cores, median (range)	1 (1-3)	2(1-26)
Proportion of positive cores (%), mean	10	17
Interval to repeat biopsy (days), median (range)	364 (167-1183)	524(247-1302)
Number of cores at repeat biopsy, median (range)	23(13-29)	22.5(13-37)
PSA at repeat biopsy (ng/ml), median (range)	7.8(3.9-26)	11.065 (7.76-21.1)
Difference in PSA between biopsies (ng/ml), median (range)	1.5(-2-11)	3.505 (1.39-8.97)

ATTACHED FIGURES



A diagrammatic representation of the outcomes of patients diagnosed with atypical small acinar proliferation [ASAP] and high-grade prostatic intra-epithelial neoplasia [HGPIN].