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*Benign prostatic hyperplasia, prostate cancer and other prostate
diseases diagnosed as a result of screening procedure among
1,004 men in the Lublin district*

Urological problems especially connected with prostate diseases appear in older men: prostatitis, benign prostatic hyperplasia (BPH), prostate cancer and others. Prostate cancer can occur at any age, but it is the most common over the age of fifty. Nowadays it is the commonest cancer in men and the second leading cause of cancer deaths in male population (2, 3). According to the data of the Department of Cancer Organisation and Epidemiology of Oncology Centre in Warsaw, in 1996 year prostate cancer was 4th of the commonest cancers in Poland with standardised prevalence rate 13.6/100,000 men. Prostate cancer prevalence has constantly increased over the last 33 years. In 1996 it caused 2,655 deaths in Warsaw (15), since it usually develops with no symptoms or with very minor ones in its early phases, prostate cancer often presents in more advanced stages. Often the symptoms appear when it spreads to the tissues surrounding the prostate gland or, when it gives metastases. The symptoms of prostate cancer and BPH are similar: diuria, nocturia, urgency to urinate, hesitancy or difficulty in starting the urine, straining, dribbling and difficulty in stopping, decreased size or caliber of the stream, dysuria (1). Several methods are used to find prostate cancer: physical examination called digital rectal exam (DRE), prostate-specific-antigen (PSA) test, prostate-acid-phosphatase (PAP) test in blood. If they are abnormal, biopsy of the gland, transrectal ultrasound test (TRUS), magnetic resonance imagining, computerised tomography or others are performed.

Prostate diseases, especially prostate cancer, have become an essential problem nowadays. Therefore, it seems important to early detect prostate cancer in a general practice setting and identify high risk men due to screening procedures such as DRE or PSA tests.

OBJECTIVE

The aim of the study was to examine the character of diagnoses of a prostate disease among men who reported to a doctor during screening procedure.

MATERIAL AND METHODS

Men of the Lublin district reported to doctors in urology outpatient clinic at Clinical Hospital in Lublin in 2000. Information of screening tests among men were spread by general practitioners and by means of information leaflets. Urologists after performing interview, physical examination and DRE, initially diagnosed a prostate disease. Patients suspected of prostate cancer had further investigations (also PSA test). There were studied age and place of living of the patients.

Statistical analysis was based on the statistical programme Statistica 5.0. To compare the difference in the ranks of scores between the studied groups, there was used non-parametric chi square test at significance level of $p \leq 0.05$.

RESULTS

The studied group included 1,004 men of the Lublin district. Over a half of them (58.2%) lived in Lublin, 16% – in other towns and 28.8% – in rural areas (Fig. 1). The men aged 31–87, mean 61.6 ± 8.5 years and were divided into 3 groups: younger – aged 31–50 (8.2% of subjects), older – 51–70 (77%) and the oldest – over 70 (14.8%) (Fig. 2). Most of the reported men were 62 years old.

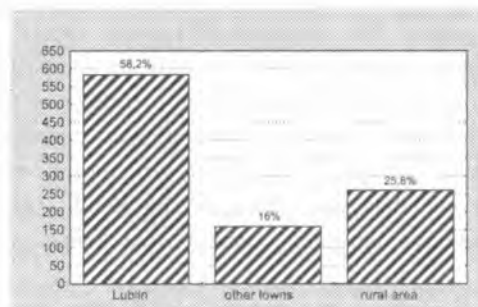


Fig. 1. Place of living

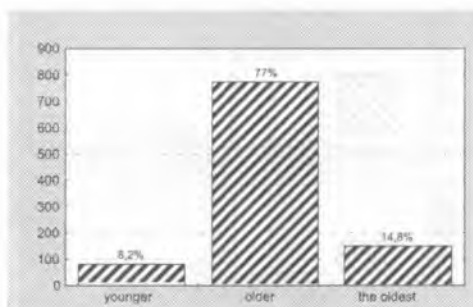


Fig. 2. Age of subjects

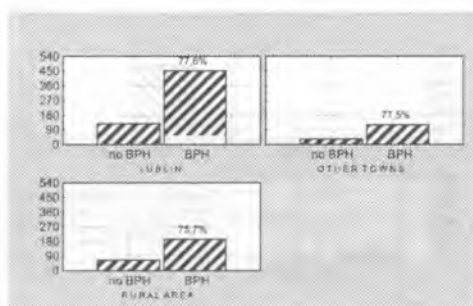


Fig. 3. BPH and place of living

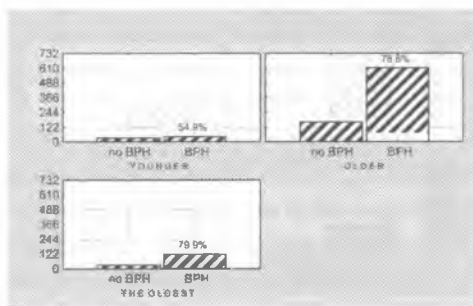


Fig. 4. BPH and age

BPH was the most common diagnosis. The disease was found in 77.1% of subjects. Among the citizens of Lublin 77.6% were affected by BPH. 77.5% incidence was observed among other towns' inhabitants and 75.7% among men of rural areas (NS) (Fig. 3). Among younger men there were 54.9% with diagnosed BPH. 78.9% was the incidence of BPH among older and 79.9% – among the oldest ($p < 0.001$) (Fig. 4).

About 6% of men had no symptoms and only needed a routine control. Among the citizens of Lublin 7.2% were asymptomatic, 3.8% – were other towns' inhabitants and 5%

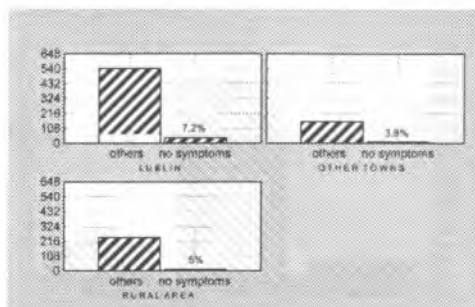


Fig. 5. Asymptomatic men and place living

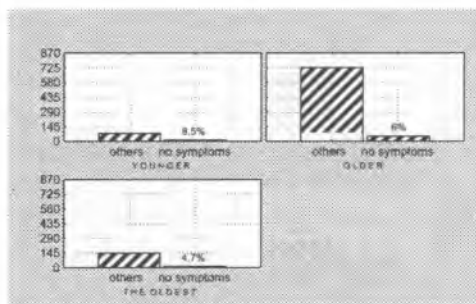


Fig. 6. Asymptomatic men and age

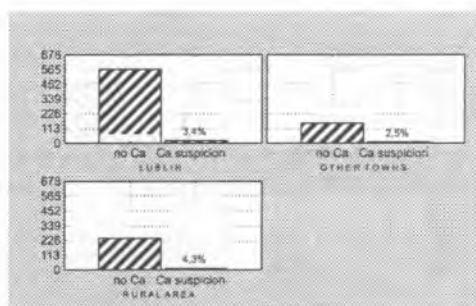


Fig. 7. Cancer prostate suspicion and place of living

– men of rural areas (NS) (Fig. 5). Among younger men there were 8.5% with no symptoms, 6% – were older men and 4.7% – the oldest (NS) (Fig. 6).

Suspicion of prostate cancer occurred in nearly 3.5% of subjects. Among the citizens of Lublin the disease was initially diagnosed in 3.4% of men, in 2.5% – among other towns' inhabitants and in 4.3% among men of rural areas (NS) (Fig. 7). Among older men there were 2.9% with suspicion of prostate cancer and 8.7% cases were among the oldest, with no younger men included ($p < 0.001$) (Fig. 8).

Other diagnoses involved: prostatitis (1.8% of subjects), neurogenic bladder (3.2%), urolithiasis (1.8%), urinary infection (1.6%), hydrocele (1.1%) and others (Tab. 1).

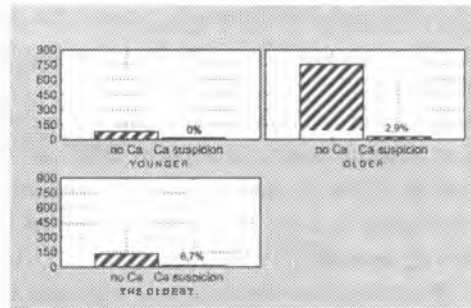


Fig. 8. Cancer suspicion and age

Table 1. Other diagnoses

Other diagnoses	Amount of subjects	Percentage
Prostatitis	18	1.8%
Neurogenic bladder	32	3.2%
Urolithiasis	18	1.8%
Urinary infection	16	1.6%
Hydrocele	11	1.1%

DISCUSSION

While screening procedures for prostate cancer are still discussed we should remember that it is possible to detect prostate cancer in its early, i.e. potentially curable stage in nearly 70% of affected men (4). Screening tests including DRE, PSA and also TRUS would increase a chance of early diagnosed prostate cancer. The positive predictive value is estimated to be 6-39% for DRE alone, over 30% – for PSA over 4 ng/ml, 10-56% – for TRUS and 51% – for combination of PSA and DRE (8). It seems purposeful to perform screening test in men aged 50-70 (2). The American Cancer Society, the American Urological Society and the American College of Radiology recommend to perform PSA and DRE tests every year in men over 50 (10). Studies showed that positive family history is one of the strongest known risk factors for prostate cancer in addition to age and race (7, 12). Data from a population-based cohort study including 5,706 sons of Swedish men, who had been diagnosed with prostate carcinoma between 1959 and 1963 proved that men with at least two close relatives with prostate cancer have a very high risk of developing prostate cancer before the age of 70. The authors recommend that these men

should undergo testing for PSA and DRE annually between the age of 50 and 70 years. Screening of individuals before the age of 50 may be recommended in selected families with a history of prostate cancer of very early onset (6, 7).

In Urological Research Centre in Perth, in Australia 221 men aged 50-79 years, with no prior proven history of prostate cancer, underwent DRE and PSA tests (3). One or both tests were abnormal in 13.7% of subjects, in 27.3% of men prostate cancer was suspected and detected by biopsy in 1.4%. In the Department of Urology in Essen, Germany urologists prospectively examined 11,644 men aged 45-75 by DRE and PSA with 4.0 ng/ml as a cutoff (8). Prostate cancer suspicion was diagnosed in 47.7% of the studied subjects and detected by a biopsy in 2.3%. In that research it was underlined that the combination of DRE and PSA is the most effective in the early detection of prostate cancer. Percentage of subjects with detected prostate carcinoma was lower in the above mentioned studies than in that research, but after using biopsy it would certainly decrease. Just the opposite, percentage of men with detected prostate cancer among 10,248 volunteers over 50 who underwent screening procedure in Washington, was equal 3% and comparable with that research (14).

The early detection of prostate cancer not always gives an opportunity to cure it due to radical treatment. The majority of symptomless changes detected by screening procedure remain with no clinical manifestation. It is assessed that about one third of men over 50 has a prostate cancer, but only in 20-25% of them the disease will manifest (9). It is one of the strongest points of screening tests opponents. However, congress of American Urological Society in 1997 claimed that statistical data showed decline in prostate cancer mortality in the United States, Canada, Austria, France, Germany, Italy and the United Kingdom over the period 1988-1991 due to the use of screening tests (11). The latest studies have also proved a significant decline in age-adjusted mortality rates from prostate cancer and have implied that PSA-based screening may be responsible for that improvement (5). The evaluation of the screening procedure for prostate cancer is part of the protocol of the European Randomised Study of Screening for Prostate Cancer (ERSPC), directed by doctor Fritz Schroeder from Rotterdam (13). The aim of the study is to establish an improved strategy for the early detection of prostate cancer.

Generally men over 50 should undergo physical examination with DRE and PSA testing by general practitioner and then if tests seem abnormal they ought to be sent to a specialist to do further investigations and finally make the right diagnosis and undertake treatment.

CONCLUSIONS

1. BPH is the most common diagnosis among men of the Lublin district and occurs most often in subjects aged 51-70 years;

2. Prostate cancer is suspected only in a small group of subjects.

3. For both frequency of BPH and prostate cancer suspicion increases with age (statistically significant), it seems purposeful to perform screening procedure in men over 50.

REFERENCES

1. Albertsen P. C.: Choroby stercza u mężczyzn w starszym wieku: łagodny rozrost stercza. *Med. Dypl.*, 36, 160, 1998.
2. Borkowski A., Borówka A.: Choroby gruczołu krokowego. PZWL, Warszawa 1997.
3. Brett T. D.: An analysis of digital rectal examination and serum-prostate-specific antigen in the early detection of prostate cancer in general practice. *Fam. Prac.*, 15, 529, 1998.
4. Chodak G. W.: Questioning the value of screening for prostate cancer in asymptomatic men (editorial). *Urology*. 42, 116, 1993.
5. Cookson M. M.: Prostate cancer: screening and early detection. *Cancer Control*, 8, 133, 2001.
6. Christenssen A. et al.: Serum prostate specific antigen complexed to alpha-1-antichymotripsin as an indicator of prostate cancer. *J. Urol.*, 150, 100, 1993.
7. Gronberg H. et al.: Age specific risks of familial prostate carcinoma: a basis for screening recommendation in high risk population. *Cancer*, 86, 477, 1999.
8. Lubold H. J.: et al.: Early detection of prostate cancer in Germany; a study using digital rectal examination and 4.0 ng/ml prostate-specific-antigen as cutoff. *Eur. Urol.*, 39, 131, 2001.
9. Lutge S., Love N.: Badania przesiewowe w raku gruczołu krokowego. *Med. Dypl.*, 6, 23, 1997.
10. Mettlin C. et al.: Defining and updating the American Cancer Society guidelines for the cancer-related checkup: prostate and endometrial cancers. *C. A. Cancer J. Clin.*, 43, 42, 1993.
11. Oliver S. E. et al.: International trends in prostate-cancer mortality in the "PSA ERA". *Int. J. Cancer.*, 92, 893, 2001.
12. Rodriguez C. et al.: Family history and risk of fatal prostate cancer. *Epidemiology*, 8, 653, 1997.
13. Schroeder F. H. et al.: Prostate-specific antigen-based early detection of prostate cancer – validation of screening without rectal examination. *Urol.*, 57, 83, 2001.
14. Smith D. S. et al.: Longitudinal screening for prostate cancer with prostate-specific-antigen. *JAMA*, 276, 1309, 1996.

15. Zatoński W., Tyczyński J.: Nowotwory złośliwe w Polsce w 1996 roku. Centrum Onkologii – Instytut im. M. Skłodowskiej-Curie, Krajowy Rejestr Nowotworów, Warszawa 1999.

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SUMMARY

Urological problems especially connected with prostate diseases appear in older men: prostatitis, benign prostatic hyperplasia, prostate cancer and others. Prostate cancer is the most common cancer in men and the second leading cause of deaths in male population. Therefore, it seems important to early detect prostate cancer in general practice setting due to screening procedures such as digital rectal exam and prostate-specific-antigen test. The aim of the study was to examine the character of diagnoses of a prostate disease among 1,004 men of the Lublin district who reported to a doctor during screening procedure carried out in urology outpatient clinic at Clinical Hospital in Lublin in the year 2000. After physical examination urologists initially diagnosed a prostate disease and sent men suspected to have a prostate cancer to further investigations. There was studied age and place of living. Benign prostate hyperplasia was the most common diagnosis made in 77.1% of subjects. It occurred most often in men aged 51-70 years. Prostate cancer was suspected in 3.5% of subjects. Frequency of benign prostate hyperplasia and prostate cancer suspicion increased with age. On the basis of studies screening procedures seem beneficial in the early detection of prostate cancer in men over 50.

Łagodny rozrost prostaty, rak prostaty oraz inne choroby stercza w badaniu przesiewowym 1004 mężczyzn z województwa lubelskiego

Wraz z wiekiem choroby gruczołu krokowego, takie jak łagodny rozrost prostaty, rak prostaty i inne, stają się poważnym problemem dla mężczyzn. Rak prostaty jest najczęstszym nowotworem złośliwym u mężczyzn, drugą pod względem częstości przyczyną zgonów spowodowanych nowotworem. Podejmuje się więc starania, aby zidentyfikować mężczyzn obciążonych wyższym niż przeciętne ryzykiem zachorowania. Temu służą badania przesiewowe, do których zalicza się między innymi badanie *per rectum* oraz oznaczenie markerów, takich jak specyficzny antygen sterczowy PSA. Celem pracy była ocena wstępnie postawionego przez lekarzy urologów rozpoznania choroby gruczołu krokowego w badaniu przesiewowym 1004 mężczyzn z województwa lubelskiego, zgłaszających się do Przyklinicznej Poradni Urologicznej w r. 2000. Pacjenci po zebraniu wywiadu poddani byli badaniu fizykalnemu, w tym badaniu *per rectum*. Mężczyźni, u których podejrzewano raka

prostaty, zostali skierowanie na oznaczenie PSA we krwi. W badaniach uwzględniono miejsce zamieszkania i wiek pacjentów. Najczęściej stawianą wstępną diagnozą był łagodny rozrost prostaty, który dotyczył 77,1% badanych, przeważnie w wieku 51-70 lat. Raka prostaty podejrzewano u niewielkiej grupy mężczyzn (3,5%). Ze względu na to, że częstość rozpoznania łagodnego rozrostu prostaty oraz podejrzenia raka prostaty zwiększały się wraz z wiekiem badanej populacji, wydaje się celowe wykonywanie badań przesiewowych u mężczyzn powyżej 50 roku życia.