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Clinical and histopathological characteristics of Finnish familial prostate cancers

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Introduction and Objectives: Prostate cancer (PrCa) is the most common malignancy in men in many industrialized countries and positive family history of the disease is one of the strongest known risk factors of this disease. However, clinical features of familial PrCa are still poorly known. Families with PrCa have been collected in Finland since 1995. The aim of this study was to describe clinical characteristics of PrCas in the Finnish PrCa families using detailed analysis of patient records and histopathological samples.

Material and Methods: 202 Finnish families with 617 PrCa cases with confirmed histology and genealogy was collected. The mean number of affected men per family was 3.1. Complete clinical data including age and PSA at diagnosis, stage, grade and primary treatment was collected from hospital records. All the diagnostic biopsy samples, which were available (n=323) were collected, reviewed and re-graded by the same experienced uropathologist.

Results: The mean year of diagnosis was 1993 (range 1962–2006) and the mean age at diagnosis was 68 (range 43–98). The median value of primary PSA was 16 (range 0.8–11000). In clinical staging 49% had local T1–2 disease, 39% advanced, stage T3–4 disease and 17% of the patients had metastases at the time of diagnosis. In original histological grading 11% of the PrCa cases had WHO III, 56% had WHO II and 33% WHO I. After re-grading the grade distribution was: 22% WHO III, 65% WHO II and 13% WHO I. In original Gleason grading (available of 204, 63% of the samples) the distribution was 72% of Gleason score under 7, 18% of Gleason score 7 and 11% of Gleason score over 7. And after re-evaluation 38% of Gleason score under 7, 37% of Gleason score 7 and 25% of Gleason score over 7, respectively. The changes were statistically significant ($p=0.0015$ in WHO grading and $p=6.9 \times 10^{-8}$ in Gleason grading). The most common primary treatments were surgical castration (27%), radical prostatectomy (24%), chemical castration (11%) and radiation therapy (10%).

Conclusions: Familial PrCa has a slightly earlier age of onset than the mean age of diagnosis of PrCa in Finland. However, the criteria for Gleason grading has changed remarkably during the 14 years of collection. Therefore, preferably re-evaluation and re-grading by the experienced uropathologist is needed when comparing pathological grading of tumours from a long time period.

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Impact of Neoadjuvant Hormonal Therapy (NHT) on prostate cancer Gleason score and staging based on the comparison of TRUScoreBx and post radical prostatectomy specimens

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Introduction and Objectives: NHT is being applied in patients scheduled for operative treatment of prostate cancer due to reported by some authors potential; advantages as decrease of the size of the tumor and prostate facilitating surgery, rarer positive surgical margins, possibility to postpone surgery

and reduction of cancer cells spread into blood vessels. Nevertheless, NHT nowadays is not recommended by EAU (class A recommendation) due to lack of evidence of long term benefit, high costs of therapy, possibility of histological assessment alteration and suppression of PSA levels which makes this factor useless in post surgical evaluation of the patient. Objectives: The authors assess the influence of NHT on histopathological findings in prostate comparing specimens from TRUScoreBx and after radical prostatectomy.

Material and Methods: We retrospectively analyzed 215 radical prostatectomies performed in two reference centers (1, n=84 and 2, n=131) in the period 2007–2008. Only patients who had TRUScoreBx and radical prostatectomy performed in the same center were included (n=117; centre 1, n=44, centre 2, n=73). In the centre 1, all patients after TRUScoreBx received NHT (n=44). The LH-RH analog and antiandrogens were used. We compared both groups with respect to age, PSA levels, Gleason grading of biopsy specimens, timing of surgery after first diagnosis, Gleason score and staging (pT) after radical prostatectomy.

Results: We found no significant difference in age and PSA levels in both groups in the moment in first diagnosis of prostate cancer. There were no significant difference in Gleason score of TRUScoreBx in both groups. Timing of surgery was similar, median 73 days (18–568) in NHT group and median 65 days (27–331) in non-NHT group. The number of Gleason score <7 in NHT group was significantly lower than in non-NHT group (72.73% vs 90.41%). We found in post prostatectomy specimens pT3 stage in 41 (40.17%) cases and in this group we found significant difference between NHT and non-NHT group (pT3 11.36% in NHT group vs pT3 49.32% in non-NHT group).

Conclusions: The Neoadjuvant Hormonal Therapy applied after TRUScoreBx results in higher Gleason score and lower staging of the tumor in post radical prostatectomy specimens. Long NHT causes fibrosis and atrophy of gland epithelium.

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Volume and localization of the prostate tumor as the predictive factors of the prostate cancer stage

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Introduction and Objectives: Tumor volume (TV) is one of the most important prognostic factors in the tumor characteristics and prognosis for the prostate cancer (CaP) patient. Nevertheless, the value of TV as an independent prognostic factor still remains unclear (Bostwick D.G. et al., 2000). To define correlation between the TV, localization and the stage of the CaP analyzing prostate after the radical prostatectomy.

Material and Methods: During the last five years in the Federal State Institution Russian research center for radiology and surgical technologies – Petersburg 58 prostates obtained after the radical prostatectomy because of the CaP were analyzed pathomorphologically. Correlation between the prostate gland volume, peripheral zone (PZ) volume and transitory zone (TZ) volume was issued by the definition of appropriate linear coefficients (rxy). Using correlation analysis the data about absolute and relative tumor volume in a prostate gland were compared with pathological stage frequency (pT3).

Results: Correlation between the percentage of PZ volume and prostate gland volume is significant and inverse (rxy=-0.58), and between the percentage of TZ volume and prostate gland volume is significant and direct (rxy=0.61). In all patients with adenocarcinoma in TZ the tumor was limited by prostate gland (pT2) in contrast to the patients with adenocarcinoma in PZ (16 from 47 patients had pT3), in spite of less tumor volume