Wednesday 25 June 15.30–17.00
Prostate Cancer
Chairmen: D. Kirk and H. Kynaston

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Increased risk of prostate cancer in UK Afro–Caribbean immigrants

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INTRODUCTION

It is increasingly accepted that men of Afro-Caribbean origin living a western lifestyle have an increased risk of prostate cancer (DoH website, 2002). Despite Kingston, Jamaica having the highest incidence in the world (304 cases per 100 000) there is a paucity of statistical data on incidences of prostate cancer in UK immigrants. To address this, we investigated the effect of ethnic origin on the incidence of prostate cancer in the multi-ethnic East End of London.

PATIENTS AND METHODS

Patients diagnosed with prostate cancer from a well-defined geographical area with a centralised histopathology service were identified. Demographic data were obtained from the East City and London Health Authority.

RESULTS

In 1999 there were 184 new diagnoses of prostate cancer. Ethnicity was obtained directly from patients or their hospital records. After age adjustment the incidences were 25 per 100 000 (95% CI 20.6–29.7) for white men and 72 per 100 000 (95% CI 48.2–95.7) Afro-Caribbean men. Poisson regression analysis shows that Afro-Caribbean men have an almost three-fold relative risk. In this study only six cases arose in Asian men.

CONCLUSION

This statistically valid sample provides the first UK data to support the African-American experience. Analysis is continuing in attempt to confirm an apparent deficit of Asian men in this cohort. If confirmed by the ongoing Department of Health PROCESS study, this observation has implications for targeted screening.

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Trends in reporting Gleason score in prostate cancer 1991–2001: the impact of PSA and the pathologist

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INTRODUCTION

In recent years there has been a stage and grade migration towards moderately differentiated prostate cancer, associated with the increasing use of the PSA test. Factors that may contribute to this migration include the inherent properties of the PSA test and changes in pathological interpretation of Gleason patterns. We sought to investigate this by reviewing the pathological records of patients with prostate cancer.

PATIENTS AND METHODS

Gleason scores for prostate cancer were obtained from a pathology database. We analysed the trends in Gleason score, method of diagnosis, age at diagnosis and percentage of patients with moderately differentiated cancer (aged ≤70 years) from 1991–2001.

RESULTS

In all, 2737 patients with prostate cancer were diagnosed and assigned Gleason scores, i.e. 1484 by prostate biopsy and 1172 by TURP; 273 radical prostatectomy samples were also received. In 1991, 99 prostate cancers were diagnosed; 24% well-differentiated and 49% moderately differentiated. The mean age at diagnosis was 73.8 years and 30% of the patients with moderately differentiated cancer were ≤70 years old. In 2001, 376 prostate cancers were diagnosed; 2.4% well-differentiated and 73.7% moderately differentiated. The mean age at diagnosis was 70.4 years and 56% of patients with moderately differentiated cancer were ≤70 years old. These overall trends were reflected in the analysis of prostate biopsy and radical prostatectomy Gleason scores.

CONCLUSION

The proportion of moderately differentiated prostate cancer detected has increased. Changes in pathological interpretation appear to contribute to this shift, but cannot account for all of it. An increasing proportion of men aged ≤ 70 years with moderately differentiated cancer suggest that more clinically significant prostate cancer is being detected.

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Gleason grade at biopsy and radical prostatectomy: does it correlate?

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INTRODUCTION

The biopsy Gleason grade of prostatic cancer is a factor used to make management decisions as Gleason score is one of the most important predictors of cancer outcome. The aim of this study was to assess how accurately the Gleason score at prostatic biopsy correlated with the whole tumour Gleason score obtained at radical prostatectomy (RP).

PATIENTS AND METHODS

The records were reviewed of 624 men who underwent RP and whose prostatic biopsies and RP findings were reported by one pathologist. In this series the Gleason score at RP consists of the two Gleason scores, each 1–5, from the two most dominant areas by volume. At biopsy the two highest Gleason scores were summed to give the overall Gleason score. The total Gleason scores were compared.

RESULTS

The Gleason score at biopsy correlated with the RP Gleason score in 47% of cases. In 25% of patients the biopsy Gleason underscored the RP Gleason by 1 point, in 5% by 2 points and in 2% by 3 points; 19% of men were over-graded at biopsy by 1 point and 2% by 2 points. The most common Gleason score at biopsy was 6; of these, 39% had Gleason 6 and 44% had Gleason ≥7 at RP. Gleason ≤6 at biopsy had a sensitivity of 90% and a specificity of 58% of being Gleason ≤6 at RP. The positive predictive value of Gleason ≤ 6 at biopsy was 59% and the negative predictive value 90%.

CONCLUSIONS

Key management decisions in men with prostatic cancer are made on the Gleason biopsy results. In this series, more than half of the patients had a final Gleason score that was different from their biopsy score, and this occurred over the range of Gleason scores.

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Predictive nomograms in prostate cancer – a UK series

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INTRODUCTION

Predictive tables are used routinely in the management of men with prostate cancer to assess an individual's risk of extraprostatic disease or biochemical outcome, based on clinical stage, preoperative PSA level and biopsy Gleason sum. Using a large essentially unscreened UK series the best predictors of pathological stage were calculated and predictive nomograms constructed.

METHODS

The radical prostatectomy database holds pathological details on 1026 patients; nine surgeons contribute and one histopathologist assesses all the pathology. Univariate analysis was used to explore the unadjusted relationships of eight predictor variables with pathological stage, pT2 vs pT3a+ or pT2 vs pT3a vs pT3b+LN+. Multivariate analysis by logistic regression was used to assess the adjusted relationships of the predictors with pathological stage. Nomograms were constructed for the best multivariate models and for simplified models with fewer predictors. 'Bootstrap' analyses were then obtained to validate the performance of the nomograms.

RESULTS

Univariate analysis showed that age ($P < 0.001$), prostate weight ($P = 0.041$), preoperative PSA level, biopsy Gleason sum, percentage of positive cores, percentage maximum tumour length in a single core and maximum tumour length in a single core (all $P < 0.001$) were significant predictors of stage, NHS vs private status ($P = 0.33$) was not. Multivariate analysis showed all of these seven predictors to be significant, except maximum tumour length in a single core. Two nomograms were constructed, one containing the six predictors significant in the multivariate analysis, and a simplified one containing four predictors (age, percentage number of positive cores, Gleason grade, preoperative PSA).

CONCLUSIONS

These nomograms are derived from a large unscreened UK series and exclude the subjectivity of clinical stage, while remaining easy to use.

Funding: Prostate Research Campaign UK

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Laparoscopic radical prostatectomy: follow-up after 1000 cases

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INTRODUCTION

Laparoscopic radical prostatectomy (LRP) is a developing technique with promising results for patients for oncology, function and recovery time. This review summarises our experience of LRP since 1998.

PATIENTS AND METHODS

Four surgeons performed 1000 LRPs transperitoneally between January 1998 and January 2002. The mean (SD) age of the patients was 63 (6.2) years; the clinical stages were T1 and T2 in 669 and 331, respectively. The mean (SD) preoperative PSA level was 10 (6.1) ng/mL, the Gleason score 6 (1) and the prostate size 58. (23.2) g.

RESULTS

The mean operative duration was 200 min, the blood loss 380 mL and the hospital stay 5.8 days. The pathological stage was pT2a, pT2b, pT3a, pT3b, pT1–3N1 in 203, 572, 142, 77 and six patients, respectively. The positive surgical margin rate was 18%. Biochemical failures occurred in 9% of patients after 1 year of follow-up. The recovery of potency and continence results were encouraging. Major complications, consisting mainly of rectal tears, occurred in 10 patients.

CONCLUSION

LRP is a feasible operation when performed by a trained team. The mid-term oncological results are very comparable with those from open surgery and the functional results promising. A long-term follow-up is needed to confirm our assumptions.

Funding: Prostate Research Campaign UK

084

Should radical retropubic prostatectomy be undertaken in the UK on patients with a PSA of >10 ng/mL

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INTRODUCTION

Predicting which patients are at high risk of biochemical failure after radical prostatectomy (RP) using preoperative variables allows patient selection to be optimised. Most patients with an initial PSA of >10 ng/mL are advised against RP on the basis of the high biochemical failure rates reported in the USA. Patients with a PSA of >10 ng/mL are still selected for RP in the UK. The purpose of this study was to examine the association of preoperative variables in predicting patients who would be at risk of early biochemical failure in a UK population.

PATIENTS AND METHODS

In all, 259 patients underwent RP over a 9-year period in our institution. Biochemical failure was defined as three consecutive PSA increases of >0.4 ng/mL. All patients who received neoadjuvant or adjuvant treatment were excluded from the original cohort.

RESULTS

The median PSA level was 13.5 ng/mL; the mean (SD) Kaplan–Meier survival probabilities at 1, 3 and 5 years were 0.92 (0.02), 0.82 (0.04) and 0.70 (0.07), respectively for the entire cohort. Only PSA level and biopsy grade were significant preoperative predictors of biochemical failure ($P < 0.001$ and 0.0043, respectively) on multivariate analysis. Kaplan–Meier survival probabilities at 5 years for patients with a PSA level of < or >10 ng/mL were 0.89 (0.07) and 0.34 (0.12), respectively (log-rank $P < 0.001$, hazard ratio 0.1, 95% CI 0.04–0.24). The median time to PSA recurrence for patients with a PSA of >10 ng/mL was reached at 48.4 months (95% CI 45.1–51.7).

CONCLUSION

Patients with a PSA level of >10 ng/mL have a very poor 5-year PSA recurrence-free survival, estimated at 34% in the UK. This raises the question of whether such patients should be offered RP.

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The significance of a positive urethral margin at radical prostatectomy

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INTRODUCTION

The finding of a positive surgical margin at radical prostatectomy (RP) is an independent predictor of tumour recurrence. The site and multiplicity of positive margins also affect the likelihood of recurrence, although the significance of a positive urethral margin is controversial. We assessed the effect of a positive urethral margin on biochemical outcome.

PATIENTS AND METHODS

Of 440 men who underwent retropubic RP by one surgeon, complete data were available for 347. The pathology was reported by one histopathologist and limits assessed using the 'shave' technique. Univariate analysis was used to explore the variables of age, radical Gleason score, pathological stage, tumour volume, lymphovascular invasion, a solitary urethral margin, a single positive margin with or without a positive urethral margin, and finally a positive surgical margin at any site, with biochemical outcome. Multivariate analysis was used to assess whether a positive urethral margin was an independent predictor of biochemical recurrence.

RESULTS

The median (range) follow-up was 24 (1–89) months. Significant predictors of biochemical recurrence using univariate analysis included Gleason grade, pathological stage, tumour volume, lymphovascular invasion (all $P < 0.001$), solitary positive urethral margin ($P = 0.048$) and a positive margin at any site ($P = 0.001$). The addition of a positive urethral margin to a coexisting positive margin at another site ($P = 0.061$) and age ($P = 0.5$) had no significant effect on the biochemical relapse rate. Multivariate analysis showed that Gleason grade, pathological stage, tumour volume, lymphovascular invasion and urethral positive margins were all independent predictors of PSA-free survival.

CONCLUSIONS

The finding of a solitary urethral margin is a significant risk factor for biochemical recurrence after RP. Positive urethral margins do not worsen the biochemical outcome further in the presence of positive margins at other sites.

Funding: Prostate Research Campaign UK

086

Clinical features of metastatic 'PSA–negative' prostate cancer

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INTRODUCTION

About 1% of men present with 'PSA-negative' prostate cancer, having serum PSA values much lower than the tumour burden would suggest. This study describes 33 metastatic cases presenting with a serum PSA of < 10 ng/mL, the largest series yet analysed.

PATIENTS AND METHODS

Patients presenting with metastatic prostate cancer and a serum PSA of < 10 ng/mL were identified from the BAUS Cancer Registry 2000 and 2001 databases. The clinical case notes were reviewed.

RESULTS

Of the 33 cases, 51% presented with urinary symptoms and/or pelvic pain, 6 % with cachexia and 21% with bony pain. Characteristic bony metastases were present in 81% of patients on imaging, with typical axial skeleton and pelvic involvement in 75%, similar to men presenting with high serum PSA values. Visceral metastases were present in two patients, with one having cutaneous metastasis. All patients received primary hormonal manipulation, 26 with LHRH agonists. The median clinical response time was 7 months. No responses were seen in 11 of 13 patients receiving second-line hormones or in the four on third-line treatment. Three of five patients receiving chemotherapy responded but relapsed within 8 weeks. The PSA levels increased to > 10 ng/mL in two men. The median overall survival was 12 months

CONCLUSION

Men with metastatic PSA-negative prostate cancer present with similar symptoms to those with high serum PSA levels. The median survival and response time to first-line hormones are much shorter, and second-line treatment is ineffective. Alternative diagnostic and management strategies need to be identified for metastatic PSA-negative patients.