INCIDENCE OF MULTIPLE PRIMARY BLADDER AND PROSTATE CANCER IN A CENTRAL REGION OF ITALY. UMBRIA, 1994-2004

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The aim of this study was to determine the incidence of multiple bladder-prostate cancers in the population of the Italian region of Umbria and to clarify some diagnostic aspects. Prostate and bladder cancer incidence data in Umbria were obtained from cancer registry records. In the period from 1994 to 2004, 3,470 new patients with bladder cancer and 5,430 new patients with prostate cancer were registered. Among these patients there were 238 who presented multiple bladder and prostate cancers. Synchronous cancers were detected in 74 of these patients. Fifty-four of them had simultaneous tumors (diagnosed during the same hospitalization), while in 16 patients bladder cancer was detected earlier than prostate cancer and in 4 patients the opposite occurred. This study confirmed an increase in prostate cancer diagnoses in patients with bladder cancer. The increase was mainly accounted for by the detection of prostate cancers during cystectomies performed for bladder carcinoma.

Key words: incidence, multiple bladder-prostate cancer.

Introduction

In the central Italian region of Umbria the incidence of prostate and bladder cancer in males is not particularly high compared to other areas in Italy, even if voluntary PSA screening, on the one hand, and early bladder cancer detection, on the other, are frequent in the male population. In the 1994-2004 period the Umbrian Population Cancer Registry (RTUP) recorded 5,130 prostate cancers (87% with microscopic verification) and 3,470 male urinary bladder cancers (92% with microscopic verification); the corresponding age-adjusted incidence rates are lower and slightly higher, respectively, than those of the pool of Italian Registries. Several authors reported a surprisingly close association between these 2 malignancies and the incidence of prostate cancer in the pathology specimens of patients undergoing radical cystectomy for invasive bladder cancer has been noted to be in the range of 25% to 70%, even if other studies showed lower rates.

The aim of the present study was to determine the incidence of multiple bladder-prostate cancers in the Umbrian population and to clarify some diagnostic aspects.

Material and methods

Incidence data from 1994 to 2004 were obtained from the RTUP; the cases were collected, coded, stored and analyzed in accordance with the standard methods recommended for cancer registries. In this period, 238 patients with multiple bladder (C67 ICD-10) and prostate (C61 ICD-10) cancers were identified. All bladder cancer cases were histologically confirmed as transitional cell carcinomas and all prostate cancer cases as adenocarcinomas; in 11 cases the morphology type was confirmed by the general practitioner. The term “synchronous tumors” refers to cancers diagnosed within 2 months of the initial diagnosis, while “simultaneous tumors” were tumors identified during the same hospitalization. Cases of colorectal carcinomas (4,857 males) were codified as C18-C21 ICD-10.

Results

Figure 1 shows the distribution of multiple cancers detected over a 2-year period. The x-axis reports the difference between the dates of prostate cancer diagnosis and bladder cancer diagnosis. Among the 238 patients who presented multiple bladder and prostate cancers, 74 (31.1%) were considered as having synchronous primary tumors. Synchronous simultaneous cancers were diagnosed in 54 patients (73.0%), while in 16 patients (21.6%) synchronous bladder cancer was diagnosed earlier than prostate cancer and only in 4 (5.4%) the opposite occurred. The percent of multiple cancers with respect to the total number of bladder cancers was small (6.9%), also considering that the RTUP records all cases of urinary bladder cancer, excluding only those specified as being non-invasive.

The figure shows that the trend in the number of multiple cases is steady up to time zero, demonstrating that, when simultaneous cases are excluded, the number of bladder cancer cases is not increased by prostate cancer diagnosis. By contrast, 21.6% of the synchronous prostate cancers were diagnosed within 2 months of bladder cancer detection. Most of the synchronous cancers were simultaneous.

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Figure 1 also shows the distribution of multiple bladder-colorectal cancers in males. The number of multiple cases recorded by RTUP over the 1994-2004 period was 133 (3.8% of the total number of bladder cancers), with only 14 (10.5%) synchronous cases, 10 of which simultaneous. The distribution shows that the peak at time zero is much smaller than that of multiple bladder-prostate cases.

Figure 1 - Distribution of multiple bladder-prostate cancer (solid line) and bladder-colorectal cancer (dashed line). The months refer to the difference between the date of first prostate (or colorectal) and bladder cancer diagnosis.

Conclusions

Our analysis confirmed an increase in diagnoses of prostate cancer in patients with bladder cancer, and this increase is largely related to synchronous cases. In our database the association between these 2 cancers is the highest among male patients with multiple cancers and the comparison with multiple bladder-colorectal cancers demonstrated that the number of these cancers is smaller, as is the number of synchronous ones. On the other hand, a significant increase in urinary bladder cancer in prostate cancer patients can be due to a supposed association between the 2 sites, due to a common pathway of carcinogenesis related to urinary stasis, chronic inflammatory insults, genetic mutations, and other factors.

In general, during a cancer diagnosis several tests are performed to evaluate the cancer’s behavior and extension; such tests may also detect other prevalent and silent tumors. In particular, simultaneous synchronous prostate and bladder cancers tend to be found in cystectomies performed for bladder carcinomas: in several studies, old patients undergoing radical cystectomy for bladder cancer often had an incidental finding of prostate cancer.

That may be an interesting aspect to investigate, but in the present work, because of the relatively small number of multiple cancers, survival rates relative to patients with multiple and single primary cancers are difficult to compare, taking also into account the large number of concomitant variables that contribute to define the outcome.

References