

Multidisciplinary management of urogenital tumours at the Ente Ospedaliero Cantonale

The EOC Multidisciplinary Urogenital Tumour Board, Ospedale San Giovanni, Bellinzona

Keywords: cancer management, multidisciplinary tumour board, urogenital tumour

Summary

BACKGROUND: This article reports the activity of the tumour board established at EOC for the management of patients with urogenital malignancies (Uroboard).

METHODS: The study cohort includes 274 consecutive patients who were presented for discussion at Uroboard between October 2010 and May 2013. A treatment strategy or diagnostic indication was formulated after evaluation of patient's medical history and diagnostic reports.

RESULTS: A total of 274 cases of urogenital tumours were discussed from October 2010 to May 2013; 227 cases were at their first presentation at the board and included patients with cancer of the prostate (44.06%), kidney (24.23%), bladder (19.38%), testis (10.13%) and others (2.20%). The percentage of cases discussed at diagnosis rose from 14.06% in the period October 2010-May 2011 to 40.00% in the period October 2012-May 2013. Furthermore, an increased enrolment in clinical trials was observed. About the Uroboard recommendations we revealed approximately 20% of patients managed by surveillance or short-term follow-up and 15% of cases for which treatment decisions were affected by patient's wishes or comorbidities or further specialised consultation. Tumour conference also favoured staging or reevaluation of the disease (nearly 16%).

CONCLUSIONS: Treatment decisions, especially of newly diagnosed urogenital malignancies, are formulated within the Uroboard for a significantly increasing number of patients at our institution. The activity of the Uroboard also supported enrolment in clinical trials and in our local prostate cancer database and provided a forum for interdisciplinary working favouring communication among physicians and preparation of local urogenital cancer protocols according to international guidelines.

Introduction

Multidisciplinary tumour boards are designed to improve clinical decision-making and management for patients suffering from malignancies in order to warrant diagnosis and treatment strategy agreed by experts of different medical specialties. Many studies have shown a significant influence of multidisciplinary cancer conferences on clinical decision and treatment recommendations [1-7], even if few studies have evaluated their impact on patient outcomes [8-12]. Most concluded for an association between multidisciplinary tumour board and improved patient survival [8-11]. Literature also supports a more accurate staging and a greater likelihood of receiving treatment in accordance with cancer guidelines for patients' cases discussed at the tumour board [13, 14]. Here we report the activity of the tumour board that was established at EOC in 2010 for the management of patients with urogenital malignancies. The tumour board was founded to improve the interdisciplinary approach to the management of urologic cancers at our institution and to adapt new therapeutic strategies to international and standardised protocols for reaching the best treatment outcome for single patient. The main aims of the tumour board were: 1) to maintain over time regular and sustained contacts among all specialists who deal with urogenital tumours; 2) to improve diagnostic and staging assessment; 3) to improve the quality of care by ensuring all appropriate and available treatment options for individual patients with urologic malignancies; 4) to lead physicians to formulate treatment plans agreed by all specialists and in accordance with cancer guidelines; 5) to contribute to development of local patient management protocol and follow-up strategies; 6) to support research and clinical trial recruitment.

Methods

Multidisciplinary Tumour Board

A multidisciplinary urogenital tumour board (Uroboard) was established at our institution in 2010. Meetings occur twice a month via videoconference connecting four hospitals of the EOC (Ospedale Regionale di Mendrisio, Ospedale Regionale di Locarno, Ospedale Regionale di Lugano, Ospedale Regionale di Bellinzona e Valli) and the Pathology Institute-Ticino Cancer Registry in Ticino (Switzerland). Multiple experts in various medical fields (urology, radiotherapy, oncology, pathology, radiology, nuclear medicine, epidemiology, data management) are present at the Uroboard. A slide resuming patient's clinical information is presented by the referring physician at the board. For each case, pathologic and diagnostic imaging are reviewed and discussed. A specific treatment strategy or diagnostic indication is formulated after evaluation of patient's medical history and all available diagnostic reports.

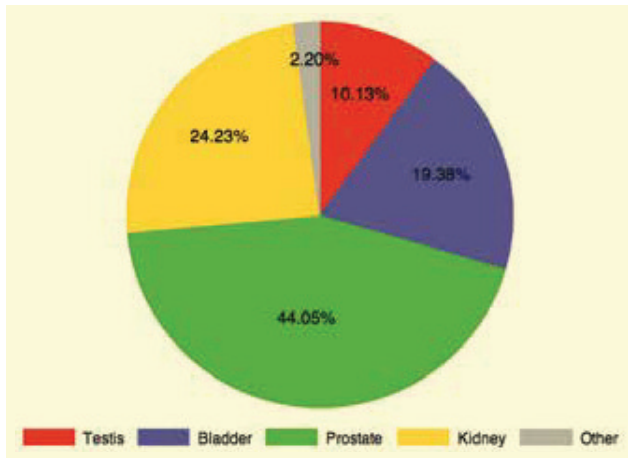


Figure 1: percentage of cases discussed at first presentation at Uroboard by site of the tumour.

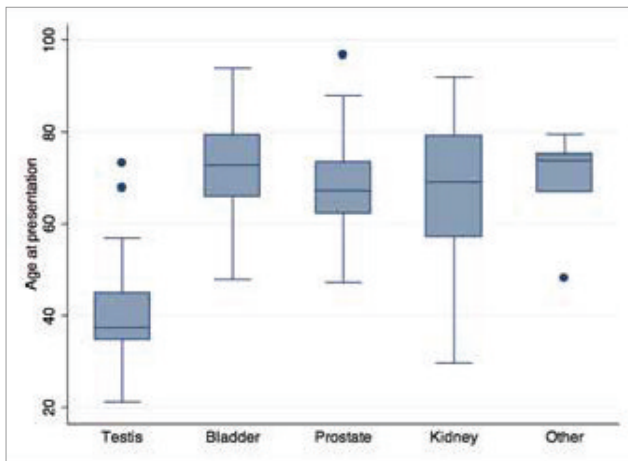


Figure 2: box plot of age of patients at first presentation at Uroboard by site of the tumour.

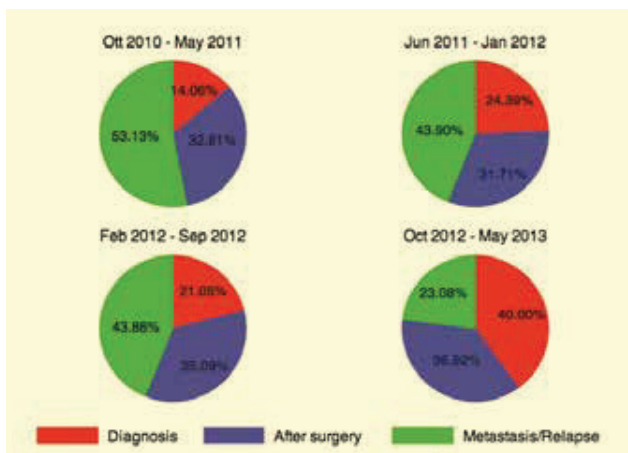


Figure 3: percentage of cases at first presentation discussed at diagnosis, after surgery and at metastasis or relapse in four consecutive periods of the Uroboard activity at EOC.

Patient cohort

The study cohort includes 274 consecutive patients who were presented for discussion at Uroboard at our institution between October 2010 and May 2013. This period was divided in four groups of eight months each: October 2010-May 2011, June 2011-January 2012, February 2012-September 2012, October 2012-May 2013. Data have been reported as percentage and, where appropriate, statistical analyses were done by using STATA software (StataCorp. 2011. Stata Statistical Software: Release 12. College Station, TX: StataCorp LP). A value of $p \leq 0.05$ was considered statistically significant.

Results

From October 2010 to May 2013, fifty-one multidisciplinary urogenital tumour board meetings were held and 274 patients' cases were discussed, of which 227 were at their first presentation at the board whereas 47 cases were re-discussed by the board after changes of patient's clinical course or further diagnostic evaluation or treatment recommendations. The referral physicians were urologists ($n=166$, 60.58%), medical oncologists ($n=87$, 31.75%) and radiotherapists ($n=21$, 7.67%). The study population at first presentation included patients with cancer of the prostate ($n=100$, 44.05%), kidney ($n=55$, 24.23%), bladder ($n=44$, 19.38%), testis ($n=23$, 10.13%) and others ($n=5$, 2.20%) (Figure 1). One hundred and ninety-six were male and 31 female. The median age at first presentation was 68.07 years (range, 21.26-96.58 years) with approximately 40% of patients with age ≥ 70 years. Box plot of age at presentation by site of the tumour (Figure 2) showed a lower median age for testis cancer (37.45 years) with greater incidence in younger patients (75% of patients with age < 45 years), whereas bladder, prostate and kidney cancers occurred at higher age with median age of 72.80, 67.30 and 69.00 years respectively.

The percentage of cases discussed at diagnosis, that were patients which had not yet started a specific treatment, rose from 14.06% in the period October 2010-May 2011 to 40.00% in the period October 2012-May 2013 ($\chi^2 = 17.15$, degree of freedom (df) = 6, $p = 0.0087$). A constant decrease was observed for patients discussed at relapse or metastatic stages, who passed from 53.12% to 23.08% in the same periods. No differences over years were revealed for cases discussed after surgery (Figure 3). As expected, urologists referred mostly cases after surgery, while oncologists and radiotherapists discussed cases at metastasis or relapse (Table 1) (Fisher's exact test, $p < 0.0001$). Changes in the number of cases per month, including both first presentation and re-discussion, presented at the tumour board were also noted (from 8.37 in the period October 2010-May 2011 to 10.12 in the period October 2012-

Stage at presentation	Physician		
	Urologist N (%)	Oncologist N (%)	Radiotherapist N (%)
Diagnosis	40 (24.10)	20 (22.99)	2 (9.52)
After surgery	77 (46.39)	11 (12.64)	1 (4.76)
Metastasis/Relapse	49 (29.52)	56 (64.37)	18 (85.71)
Total	166 (100.00)	87 (100.00)	21 (100.00)

Table 1: stage at presentation at Uroboard according to type of physician.

May 2013). Furthermore, an increased access to clinical trials was observed with 9 patients enrolled in the period 2012-2013 (last update March 2013) compared to 3 in the period 2010-2011.

The Uroboard recommendations were surgery (n=32, 11.68%), chemotherapy (n=24, 8.76%), radiotherapy (n=22, 8.03%), adjuvant chemotherapy or radiotherapy (n=18, 6.57%), palliative care (n=14, 5.11%) and others (n=27, 9.85%). Moreover, active surveillance or short-term follow-up was recommended in 54 patients (19.71%), especially prostate (n=15, 27.78%) and kidney (n=20, 37.04%) cancer patients. Further diagnostic procedures for staging or reevaluation of the disease were suggested in 44 (16.06%) patients, whereas reconfirmation of treatment according to patient's wishes or comorbidities or specialised centre consultation was proposed in 13 (4.74%), 11 (4.01%) and 15 (5.47%) patients respectively.

Finally, 6.61% of patients' cases were re-discussed at the tumour conference after diagnostic exams or surgery recommended in a previous tumour board, whereas 3.96% of patients were discussed at evolution of the disease to metastatic or relapse stage. Our analysis did not reveal any particular correlation between re-discussion of the case at the board and site of the disease (Fisher's exact test, $p = 0.6369$). Ten patients' cases were discussed 3 times or more at the Uroboard. The 68.08% of the cases at re-discussion at the board were patients at metastatic or relapse stage of the disease.

Discussion

The activity of the multidisciplinary tumour board seems to have changed management of patients with urologic cancers at our institution. The Uroboard focused mainly on new referrals, that are patients who have not yet been treated, and only a small proportion of patients with metastatic or recurrent disease or after further diagnostic evaluation or treatments was re-discussed. Treatment decisions, especially of newly diagnosed urogenital malignancies, are formulated within the board of all medical specialists for

a significantly increasing number of patients. This finding is of significant importance for several aspects: first it confirms the need for specialists to discuss in particular newly diagnosed cases, second it also shows that the Uroboard discusses openly cases which were previously treated according to the advice of a single specialist and last that there is confidence of all Uroboard participants to entrust the decision of experts from different disciplines. About the Uroboard recommendations we reveal approximately 20% of patients managed by surveillance or short-term follow-up and 15% of cases for which treatment decisions were affected by patient's wishes or comorbidities or further specialised centre consultation. Tumour conference also favours staging or reevaluation of the disease (nearly 16%) to reach a punctual diagnosis and, thus, the most appropriate therapeutic option for individual patient. Moreover, each patient is followed during disease's evolution and each diagnostic or treatment decision is taken by all specialists in the board.

We also registered an increased access to clinical trials during the activity of the Uroboard confirming the multidisciplinary conference as the best approach for discussing about patient eligibility and accrual in clinical trials [15]. Our finding is consistent with Kuroki et al. [15] who reported likelihood 2.5 times more to enrol in clinical trials for patients discussed at the gynecologic tumour board than those not discussed. Besides clinical research protocols, the Uroboard supported also to the enrolment of patients in our local prostate cancer database [unpublished data]. Finally, the multidisciplinary board provided a forum for interdisciplinary working favouring communication among physicians and adherence to international cancer guidelines, as already reported for other tumour boards [13-14]. Moreover, during the last year we were able to prepare local urogenital cancer guidelines in relation to international protocols in four meetings, each regarding a specific type of cancer.

To date we have no data to evaluate the implementation of the Uroboard recommendations in our cohort. Considering the elevated median age and the high percentage of patients with age ≥ 70 years presented at the board, but

also the complexity and the advanced stage at which urologic cancers, except testis tumour, are often diagnosed, we would like to recruit geriatric and palliative care specialists for our future board in order to have quickly specific consultation for further improving the Uroboard final decision reaching and optimizing treatment plan for each patient. Furthermore, we did not make an analysis of the actual costs of the tumour board, but treatment decisions achieved by a team of specialists, avoiding subsequent consultations and delay in therapies, may absolutely help to reach the optimum patient care with a minimum loss of time and substantial cost savings compared to conventional health approach. In literature many studies argue about the benefits of tumour board including improved survival [8-11]. We currently have no data about the impact of our Uroboard on patient outcome, however based on our encouraging tumour board experience we would like to employ the Uroboard as a gold standard for the management of urologic patient care at EOC and set up a prospective study to evaluate the effect of tumour board recommendations on survival of our patients.

Abbreviations

EOC: Ente Ospedaliero Cantonale

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