

Interdisciplinary tumour boards in Switzerland: quo vadis?

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Summary

Background/aims: The objective of the present investigation is twofold: first, to assess how interdisciplinary tumour boards in Switzerland are designed, established, and rated in clinical practice; and second, to evaluate perceptions regarding the determination of cancer centres as required by the Swiss National Cancer Programme.

Methods: An anonymous questionnaire was sent to the heads of surgical departments in Switzerland (n = 110). Among the clinics contacted were 11 large referral centres (type A clinics), 48 surgical departments of cantonal hospitals (type B clinics), and 51 regional surgical departments (type C clinics).

Results: For most type A and B clinics, tumour boards are held on a weekly basis (A: 100%, B: 88%, C: 26%). On average, 66% of respondents (A: 90%, B: 71%, C: 52%) consider tumour boards a stan-

dard of care for every cancer patient. Determination of cancer centres was favoured by 49% of all respondents (A: 80%, B: 56%, C: 32%).

Conclusion: The present survey in Switzerland clearly shows significant differences between type A, B, and C clinics in the use of tumour boards and in their perception as a standard of care. There are wide discrepancies in the perceived need to determine cancer centres in Switzerland as required by the Swiss National Cancer Programme. Since the implementation of tumour boards is associated with optimised cancer patient care, continuing education on their importance is a vital necessity.

Key words: tumour board; interdisciplinary; National Cancer Programme Switzerland 2005–2010, Oncosuisse; multimodal treatment; survey

Introduction

The National Cancer Programme Switzerland 2005–2010 was published in 2005 by Oncosuisse (www.oncosuisse.ch) [1]. Oncosuisse is a non-profit Swiss organisation set up to improve the network of existing oncological structures and to raise their political influence. Oncosuisse received a political mandate from the Swiss Federal Office of Public Health (Bundesamt für Gesundheit = BAG) and the Cantonal Health Directors' Conference. The programme's object is to improve the treatment of cancer patients through standardised management for every tumour patient.

Interestingly, a recent investigation has revealed inequality in the treatment of breast cancer patients in Switzerland [2]. Moreover, 50% of node positive colon cancer patients in Geneva, Switzerland did not receive adjuvant chemotherapy although it was clearly indicated [3]. Similarly, fur-

ther studies in other countries have spotlighted undertreatment of cancer patients [4–7].

A multimodal approach has been proven effective in the treatment of multiple malignancies [8–13]. Many authors recommend that a multimodal treatment approach should be achieved in an interdisciplinary setting [14–16]. Interdisciplinary tumour boards are widely accepted in the management of tumour patients [17, 18] and there is evidence associating interdisciplinary tumour boards with administration of recommended, optimal treatment [19–23]. Interdisciplinary decision-making may prevent undertreatment of cancer patients and subsequent worsening of prognosis [3, 24, 25]. Moreover, interdisciplinary tumour boards are important in the palliative situation, since these patients often require individualised therapeutic approaches [26].

Detailed requirements from the National Cancer Programme Switzerland 2005–2010 include: (1) implementation of interdisciplinary tumour boards for all cancer patients in Switzerland, (2) clearly defined web-based algorithms for diagnosis, staging, therapy, and follow-up of cancer patients, and (3) determination of centres of competence for coordinated cancer treatment. However, no data are currently available by which to assess

the implementation of interdisciplinary tumour boards in Switzerland.

The objective of the present investigation was therefore twofold: first, to assess data on how interdisciplinary tumour boards in Switzerland are designed, established, and rated in the current clinical practice of surgical departments. And second, to evaluate perceptions regarding the requirements for the National Cancer Programme.

Methods

An anonymous questionnaire was sent to the heads of surgical departments in Switzerland ($n = 110$) in October 2005. Among the clinics contacted were 11 university hospitals or large referral centres (type A clinics), 48 surgical departments of cantonal hospitals (type B clinics) and 51 regional surgical departments (type C clinics). Small surgical units (type D clinics) were excluded from this survey as they often do not perform cancer surgery. Classification of the contacted hospital was based on the requirements of the Swiss Medical Association (FMH) 2005 [27]. Type A clinics are classified as tertiary referral

centres with specialised surgical subunits. Classification as a type B clinic requires a certificated intensive care unit and at least two surgical subspecialties in the staff team. To qualify as a Type C clinic, an establishment must have a permanent emergency unit and a general surgery ward [28].

One reminder was sent by e-mail to non-responders after expiry of the deadline (end of November 2005).

Members of the executive committee (ExCom) of the Swiss Group for Clinical Cancer Research (SAKK) critically reviewed the questionnaire prior to the survey.

Results

Overall, the response rate was 68% (75/110). The questionnaire was returned by 90% (10/11) of type A clinics, 70% (34/48) of type B clinics and 61% (31/51) of type C clinics.

The number of surgical departments operating on solid tumours is shown in table 1, stratified according to clinic size. The majority of high-risk surgical procedures such as operations for lung, oesophageal, pancreas, and hepatobiliary cancers are performed in type A and B clinics. Two thirds or more of type B and C clinics operate on gastric and rectal cancers. Nearly all clinics perform colon and breast cancer surgery (table 1).

A majority of the type A and B institutions

have tumour boards on a weekly or biweekly basis (type A: 100%, type B: 88%). However, only 26% of type C clinics have a weekly tumour board. In these smaller institutions tumour boards are often organised on demand (42%) or in conjunction with a larger, affiliated clinic (19%). On average 66% (A: 90%, B: 68%, C: 52%) declared interdisciplinary tumour boards as the standard of care in the management of cancer patients.

There are differences in the number of specialists involved in interdisciplinary tumour boards (table 2). While in type A clinics a broad panel of specialists (surgeon, medical oncologist, radiation oncologist, radiologist, pathologist) participate in tumour boards, the interdisciplinary team is smaller in many type B and C hospitals. For instance, a radiation oncologist is involved in 66% of type B and 38% of type C clinics compared to 100% in type A clinics. Moreover, large differences exist in regard to other specialists (table 2). Overall, 24 (32%) of the responding departments stated that additional specialists would increase their tumour board's quality.

No relevant differences in the use of pretherapeutic interdisciplinary tumour boards were observed for patients with oesophageal cancer (type A: 100%, type B: 86%, type C: 83%) and rectal cancer (type A: 100%, type B: 94%, type C: 100%). Clinically relevant differences in the use of an interdisciplinary tumour board were observed for patients with breast cancer (type A: 86%, type B: 50%, type C: 50%), gastric cancer (type A: 80%,

Table 1
Solid cancer operations performed at type A, type B, and type C clinics.

Clinic type	A (n = 10)	B (n = 34)	C (n = 31)
Thyroid cancer	100%	100%	68%
Breast cancer	70%	82%	90%
Lung cancer	100%	76%	22%
Oesophageal cancer	100%	67%	19%
Gastric cancer	100%	94%	71%
Colon cancer	100%	94%	100%
Rectal cancer	100%	94%	77%
Pancreatic cancer	100%	82%	32%
Liver tumours	100%	56%	13%
Biliary tumours	100%	62%	16%
Melanoma	100%	85%	90%

Table 2

Participants of interdisciplinary tumour boards in clinics with a weekly tumour board.

Clinic type	A (n = 10)	B (n = 30)	C (n = 8)
Surgeon	100%	97%	88%
Medical oncologist	100%	97%	88%
Radiation oncologist	100%	67%	38%
Radiologist	100%	73%	25%
Pathologist	100%	43%	38%
Gastroenterologist	90%	30%	50%
Nuclear radiologist	80%	23%	0%
Gynaecologist	40%	40%	63%
Specialist for endocrine diseases	30%	7%	0%
Registered nurse specialised in oncology	30%	17%	63%

type B: 59%, type C: 64%) and pancreatic cancer (type A: 60%, type B: 43%, type C: 30%).

Patients and their relatives are invited to the tumour board in 49% of all hospitals in the present survey (type A: 40%, type B: 31%, type C: 57%).

Large differences were found between clinics regarding their cooperation (type A: 90%, type B: 85%, type C: 45%) with one of the centres of the Swiss Group for Clinical Cancer Research (SAKK).

A web-based information system providing guidelines for the diagnostic and therapeutic management of cancer patients was favoured by 69% of all respondents (type A: 50%, type B: 64%, type C: 80%).

77% (type A: 90%, type B: 79%, type C: 71%) of the institutions considered clearly defined algorithms regarding diagnosis, staging, therapy, and follow-up of cancer patients to be useful.

Determination of centres of competence was desired by 49% of all respondents (type A: 80%, type B: 56%, type C: 32%).

Discussion

The present survey in Switzerland shows clearcut differences between type A, B, and C clinics in the use of tumour boards and perceptions of them as a standard of care. There are also major discrepancies between type A, B, and C clinics in the perceived need to determine cancer centres in Switzerland.

Inequality in the use of adjuvant treatment of patients with node positive colon cancer and with breast cancer has been reported in Switzerland [2, 3]. This gives rise to concern and highlights the importance of interdisciplinary tumour boards, given the fact that patients presented at a tumour board are more likely to receive the recommended standard therapy [18, 21, 22]. Moreover, there are various other reasons why the availability of tumour boards is important. First, there is growing evidence that interdisciplinary tumour board decisions have an influence on treatment decisions and are more likely to be put into practice [19, 20, 22, 29] than treatment decisions not made by tumour boards. This emphasises the importance of presenting every cancer patient at a tumour board, to avoid potential negative patient selection. Second, tumour boards provide an excellent opportunity to enrol patients into clinical trials. This applies not only to large tertiary care centres but also to non-university hospitals if adequate funding and access to national trial centres are provided (ie SAKK, the Study Centre of the German Surgical Society) [30]. Finally, tumour boards have relevance and importance in the training of surgical residents and continuing education of physicians [17, 31].

In the present investigation a large difference was observed between the numbers of specialists

from different disciplines (surgery, medical oncology, radiation oncology, palliative care, etc.) involved in tumour boards. As expected, the numbers of specialists involved in cancer care increases with the size of the institution. While the components of a multimodal treatment are well defined for many tumours, no guidelines exist regarding the panel of specialists that should be present at tumour boards in Switzerland. In many type B and C clinics, tumour boards consist only of a surgeon and a medical oncologist. Only in a minority of smaller hospitals is a radiation oncologist part of the interdisciplinary team, although radiotherapy plays a central role in the neoadjuvant, adjuvant, and palliative setting for many malignancies. Similarly, patients treated at high volume centres in the US were more likely to be seen by a radiation oncologist [32]. A virtual tumour board, linking hospitals lacking certain specialities (eg radiotherapy, nuclear medicine and interventional radiology) with large referral centres, could help to overcome this problem [33, 34].

Current practice in Switzerland concerning pretherapeutic tumour boards is not uniformly structured. Pretherapeutic discussion of rectal cancer patients is accepted as a standard of care, allowing for neoadjuvant treatment in cases of locally advanced disease ($\geq T3$ and for N+). Although there are generally accepted guidelines for neoadjuvant therapy for locally advanced breast cancer [35], and there is growing evidence for the use of neoadjuvant treatment for gastric cancer [36], patients with these malignancies are not generally presented in pretherapeutic tumour boards in Switzerland. This may be due to fear of losing patients to other disciplines such as medical on-

cology. On the other hand, the availability of tumour boards and multimodal handling of cancer patient care may translate into higher patient referral to one centre.

The National Cancer Programme Switzerland intends to establish a web-based information system providing clear algorithms for diagnostic procedures and treatment of solid malignancies similar to the National Comprehensive Cancer Network (www.nccn.org). Interestingly, the present survey shows that the desire to have a web-based information system was indirectly proportional to the size of the hospital. In fact, a majority of type B and C units considered a web-based information system to be useful, while only a few type A clinics were in favour of it.

This finding is somewhat surprising but may reflect the fact that specialists in large type A clinics do use international guidelines with ease, whereas physicians from smaller hospitals involved in treatment of cancer patients would benefit from a web-based information system adapted to Switzerland and which – to overcome the potential language barrier – should be in German and French.

Some authors pointed out the pivotal role of the surgeon in an interdisciplinary tumour board and the importance of leadership in a multidisciplinary team [37]. However, this requires qualified surgeons with a special interest in surgical oncology [38]. It is critically important that some surgeons undergo formal training in surgical oncology, eg through a surgical oncology fellowship [39, 40].

Wide acceptance among all clinics was found for standardised algorithms for screening, diagnosis, treatment and follow-up of cancer patients. Guidelines may be of help on complex management issues and may eliminate undertreatment [5, 7, 41, 42]. Surprisingly, nearly all of the type A units consider patient pathways to be useful, compared to type B and C units where the acceptance was slightly lower (90% *vs* 79%, 71% respectively). Such algorithms may also help in economising resources, ie by avoiding unnecessary examinations and suboptimal treatments.

Acceptance for determination of cancer centres was marked among large referral centres but low in peripheral hospitals. This may be based on political and financial rather than oncological issues. A hospital which does not perform tumour surgery will sustain a fall in patient referral, resulting in potentially major financial loss.

An important issue in the regionalisation of tumour boards is the annual caseload performed at a specific hospital. For instance, during the period from 2001 to 2003 the Swiss Association of Cancer Registries, covering 58% of the national population, counted a total of 446 patients with oesophageal malignancies per annum [43], not all of which were treated surgically as some were unresectable. In the present survey 38 surgical departments were reported to perform surgery

for oesophageal malignancies. In consequence, many of these institutions have a very low case-load for oesophageal surgery. It is a well known fact and extensively cited in the literature that low surgical volume is associated with significantly poorer prognosis for high-risk surgery (including oesophageal resections) [32, 44–47].

We would like to acknowledge the limitations of the present analysis: nearly all of the type A and a vast majority of type B clinics returned the questionnaire, but only 60% of type C clinics replied. This may result in a non-response bias for type C clinics. For instance, in the present investigation the proportion of type C clinics performing colon or breast surgery is higher than for type B clinics, a situation which seems very improbable. A possible interpretation of this finding is that type C clinics commonly performing such operations were more likely to respond to the questionnaire than type C clinics not performing breast or colon surgery. However, this suggests that the discrepancies between type A and type C clinics may be even larger than reported, and thus the direction of the bias would support our conclusions.

In summary, the present study shows wide differences between type A, B, and C clinics in the use of tumour boards and in their perception of them as a standard of care.

The implementation of tumour boards for every cancer patient in Switzerland, as required by the National Cancer Programme, is currently far from being a reality. Further steps towards standardisation in the evaluation and treatment of cancer patients are necessary. These include guidelines regarding the specialists participating in tumour boards, as well as clearly defined diagnostic and therapeutic algorithms for different malignancies. Most important and necessary is continuing education on the pivotal role of tumour boards, since there is compelling evidence that their implementation is associated with optimal cancer patient care.

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