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Clinical and Translational Oncology

ISSN 1699-048X

Clin Transl Oncol

DOI 10.1007/s12094-015-1466-9



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Paediatric tumour boards in Spain: a national survey

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Received: 21 July 2015 / Accepted: 7 December 2015

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Abstract

Purpose Multidisciplinary tumour boards (MDTs) are conducted worldwide for the management of patients with cancer, and they deliver a higher standard of care by simultaneously involving different specialists in diagnosis and treatment planning. However, information of paediatric MDTs functioning is scarce. A pilot study was conducted in Spain in the frame of the European Expert Paediatric Oncology Reference Network for Diagnostics and Treatment (ExPO-r-Net).

Methods A specific questionnaire was designed regarding various features of MDT practice. Data collected included information on the centres and the team, infrastructure for meetings, MDT organization/logistics and clinical decision-making. The survey was distributed to all Paediatric Oncology Units that register patients in the Spanish Registry of Childhood Tumours (RETI-SEHOP).

Results 32 out of 43 contacted centres responded the questionnaire (74 % response rate; 88 % response rate for centres with >25 new patients/year). All units with >25 new patients/year have a dedicated Paediatric MDT compared to 76 % of units with ≤25 new patients/year. MDTs should be improved at institutional level by clear protected time in service planning for all specialists involved,

incentives for attendance and attendance registration. Clinical decision-making process and follow-up of recommendation adherence should be assessed and potential legal responsibilities for physicians participating in Tumour Board defined. Network collaboration through virtual MDTs, using available videoconferencing tools, is an opportunity to share expertise among centres.

Keywords Tumour boards · Paediatric oncology · Cancer · Survey

Introduction

Multidisciplinary tumour boards (MDTs) are formal meetings where relevant, key specialists meet to discuss the diagnosis and management of patients with cancer [1]. They are also known as multidisciplinary cancer conferences, case conferences, clinic or tumour boards. They occur at regularly scheduled intervals and mainly involve oncologists, surgeons, radiologists, pathologists, radiation therapists and other specialists [2]. The rationale for MDT work is that the joint presence of cancer specialists from different backgrounds ensures the most appropriate management for the patient and improves quality of care.

Several studies have shown that MDTs can lead to changes in diagnosis and staging of cancer patients, affect management decisions and increase quality of care [2, 3] and are therefore considered as model of care for patients with cancer around the world [4, 5] in adult and paediatric oncology and in the surgical field [6, 7].

ExPO-r-Net is a current European project supported by the European Commission that aims to improve the quality of cancer care for children and adolescents through different tools and strategies including virtual MDT framed by

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European Reference Networks. However, information on paediatric MDT functioning is scarce. To answer this issue, a specific questionnaire has been designed to identify the role of paediatric oncology MDTs in Europe. A pilot study was conducted in Spain, and results are presented here.

Methods

A 30-question survey was designed regarding various features of MDT practice in paediatric oncology in Spain. Data collected included information on the centres and the team, infrastructure for meetings, MDT organization/logistics and clinical decision-making (Table 1). All questions were multiple choice, although some of them allowed free text responses.

All Paediatric Oncology Units that register patients in the RETI-SEHOP (Spanish Childhood Cancer Registry [8]) received the question survey. Oncology Units were stratified as follows: (A) Units that attend >25 new patients/year and (B) Units that attend ≤25 new patients/year. Participants were sent an introductory email with an invitation to fill out an electronic survey in Spanish via freely available software (<https://docs.google.com/forms/d/1jt4lxsGUjj1D9UWuqrB4I-JJmLoE8Tfo7aJMiSIIJE/edit#>). Up to three reminder emails were sent to non-respondent centres. Surveys were completed online between September and October 2014. A simplified version of this questionnaire is presented in this paper (Table 1).

Results

The centres

A total of 43 centres were contacted and 32 of them responded to the questionnaire (74 % response rate). Among the 17 Group A units (>25 new patients/year), 15 units answered the questionnaire (88 % response rate), while 17 out of 26 Group B Units (65 %) participated. Overall, 28 (88 %) of the 32 respondent centres reported having a dedicated Paediatric MDT at their institution: 100 % of respondent group A units and 76 % of respondent group B units.

The team

Paediatric MDTs are usually attended by a variety of cancer specialists. Seventy-nine per cent of the centres reported having a core member of specialists involved, which always includes a paediatric oncologist (Fig. 1). In

hospitals that do not gather all the cancer specialists in-house (14/28), this problem is solved mainly by the external specialists moving to the MDT holding institution (50 %) or connecting through video or tele-conference (10 %).

Infrastructure for meetings

Most centres have a specific conference room for the Paediatric MDT, as well as electronic access to retrospective images/reports, connection to PACS (Picture Archiving and Communication System) and equipment for projecting and viewing reports/imaging during the meeting (Fig. 2). Although 29 % of surveyed physicians have videoconferencing facilities in the MDT room (18 % through a web-based video conference system like Skype® or Adobe Connect®; and 11 % through a dedicated H. 323 Video Conference System); none of them had participated in any Virtual Tumour Board, defined as discussion of difficult cases among several institutions through videoconferencing, although 89 % declared to be willing to participate.

Meeting organisation/logistic

All paediatric MDTs were held on a regular basis, mainly weekly to bi-weekly. Four centres have several disease-specific Tumour Boards that meet periodically including central nervous system tumours, vascular tumours, sarcomas and retinoblastomas. The number of cases discussed per meeting ranged between 1 and 6, lasting under 2 h in 96 % of centres.

Attendance was reported to be mandatory in 46 % of the centres. Only 18 % of the centres have official recognition of Paediatric Tumour Board attendance, mainly in the form of a certificate of attendance. The list of patients was circulated prior to the meeting in all centres, although in most centres neither case summaries nor the reason for consultation was sent in advance. In most cases, there was no dedicated time to prepare cases before the meeting (Fig. 3). Most centres (79 %) do not have any standard operating procedures (SOPs) for MDT, and the rest have mainly general institutional guidelines. Twenty-one per cent of the surveyed physicians have support staff for MDT organization, mainly provided by the secretary of the paediatric department/oncology unit. Most respondents (82 %) stated that inclusion of Tumour Board recommendations in the patient's medical report was mandatory. Twenty-nine per cent of the centres have a Paediatric Tumour Board report template.

Table 1 Survey on MDT operation (simplified version)

The centres	Number of new cancer patients seen at your institution per year? A. <10 cases/year. B. 10–15 cases/year. C. 15–25 cases/year. D. 25–50 cases/year. E. 50–75 cases/year F. ≥75 cases/year
	Do you have a Paediatric Multidisciplinary Tumour Board? A. Yes. B. No
The team	Does your Paediatric Tumour Board have a core member group? A. Yes (please specify) B. No
	In the case of specialist not belonging to your institution, how do you manage it? A. They move to our institution for the meeting B. Teleconference C. Videoconference D. They do not participate E. Other (please specify)
Infrastructure for meetings	The Paediatric Tumour Board Meeting room has: A. A specific room for this purpose B. Equipment for projecting and viewing radiology images/specimen biopsies C. Equipment connected to PACS (Picture Archiving and Communications System) D. Access to retrospective images/reports during the meeting
	Does your Paediatric Tumour Board Meeting room have videoconferencing facilities? A. Yes, H. 323 Video Conference System B. Yes, web-based videoconference system (Skype, Adobe Connect, etc.) C. No
	Do you participate in any Virtual Paediatric Tumour Board? A. Yes (please specify) B. No, I am not interested C. No, but I would like to
Meeting organisation/ logistics	How often do you meet? A. Weekly. B. Bi-weekly. C. Monthly. D. Other (specify)
	What is the usual length of your Paediatric Tumour Board Meeting? A. Up to 1 h B. 60–120 min C. 120–180 min D. >3 h
	Please, indicate the number of cases discussed by your Paediatric Tumour Board Meeting in a single meeting: A. 1–2 cases B. 3–4 cases C. 5–6 cases D. 7–9 cases E. 10–12 cases F. >12 cases
	Attendance to the Paediatric Tumour Board is: A. Mandatory B. Optional
	There is some official recognition for the attendance to the Paediatric Tumour Board (education credits, certificate of attendance)? A. Yes (please specify) B. No
	Regarding case preparation before the Meetings: A. Preparation time for these meetings is recognized in job time schedule B. The agenda and patient list are circulated prior to the meeting C. Case summaries are circulated prior to the meeting D. Reason of consultation is specified and circulated prior to the meeting
	Do you have any standard operating procedures (SOPs) for your Paediatric Tumour Board? A. Yes (please specify) B. No
	Do you have any technical/administrative support for the Paediatric Tumour Board organization? A. Yes (please specify) B. No
	How do you document Tumour Board discussions? A. Official Paediatric Tumour Board report B. Inclusion in the patient's medical report is mandatory C. Inclusion in the patient's medical report is optional
Clinical decision-making	Which patients are discussed at the Paediatric Tumour Board Meeting?
	New cases at diagnosis: A. Always B. Mostly C. It depends on the patient's physician D. We do not usually discuss them
	Prior to surgery and/or radiotherapy: A. Always B. Mostly C. It depends on the patient's physician D. We do not usually discuss them
	After surgery and/or radiotherapy: A. Always B. Mostly C. It depends on the patient's physician D. We do not usually discuss them
	Progression/relapse: A. Always B. Mostly C. It depends on the patient's physician D. We do not usually discuss them
	Concerning the development of your Paediatric Tumour Board Meeting:
	Paediatric Tumour Board members have allocated protected time (including travel time) to attend meetings.
	A patient's case is not discussed unless all specialists who are involved are present.
	Patients are informed that a Paediatric Tumour Board will review their treatment/care.
	Whether Paediatric Tumour Board recommendations are followed or not, the patient is informed.
	Do you evaluate quality of decision-making in your Paediatric Tumour Board (i.e. MDT-MODE, etc.) A. Yes (please specify) B. No
	Paediatric Tumour Board recommendations are: A. Mandatory B. Optional C. There is a monitoring report on recommendations

Clinical decision-making

Overall, 25 (89 %) of the 28 centres with a specific Paediatric MDT stated that all/most cases at diagnosis, prior to surgery/radiotherapy and at progression/relapse, were

discussed at those meetings. Case discussion after surgery/radiotherapy was less frequent (75 %). Few respondents (24 %) indicated that they had allocated protected time to attend meetings and 60 % stated that cases were discussed even if not all the main specialists involved were present.

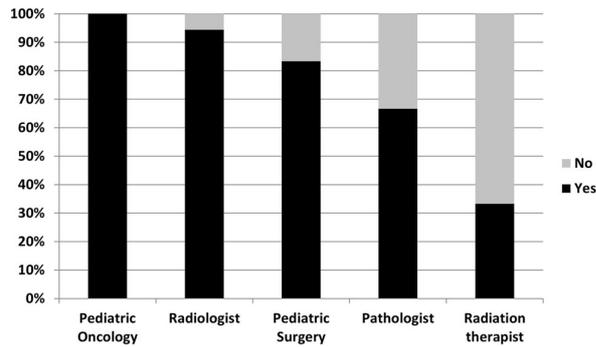


Fig. 1 Paediatric Tumour Board core member group

Most respondents (82 %) stated that inclusion of the Tumour Board recommendations in the patient’s medical report was mandatory. Eighty-four per cent of the respondents said that patients were informed that their treatment would be reviewed by a MDT, but board recommendations were shared with the patients only in 47 % of the cases. Fifty-four per cent of the survey participants stated that Paediatric Tumour Board recommendations were usually perceived as “recommendations,” while 46 % consider them as a final decision. None of the centres evaluate the quality of MDT decision-making. Only one centre monitored the follow-up of MDT recommendations.

Discussion

Multidisciplinary tumour board meetings (MDTs) are conducted worldwide for the management of patients with cancer, and they deliver a higher standard of care by simultaneously involving different specialists in diagnosis and treatment planning [2, 9]. Several national and international guidelines emphasize the importance of

Fig. 2 Paediatric Tumour Board meeting room infrastructure

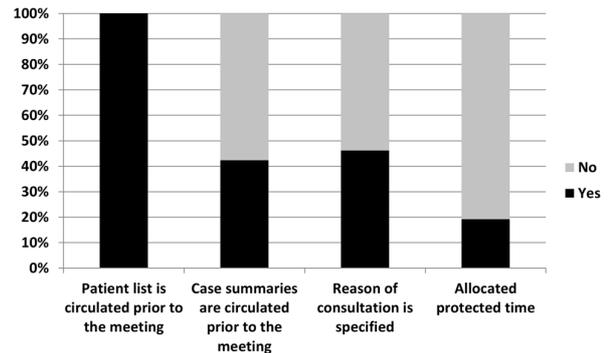
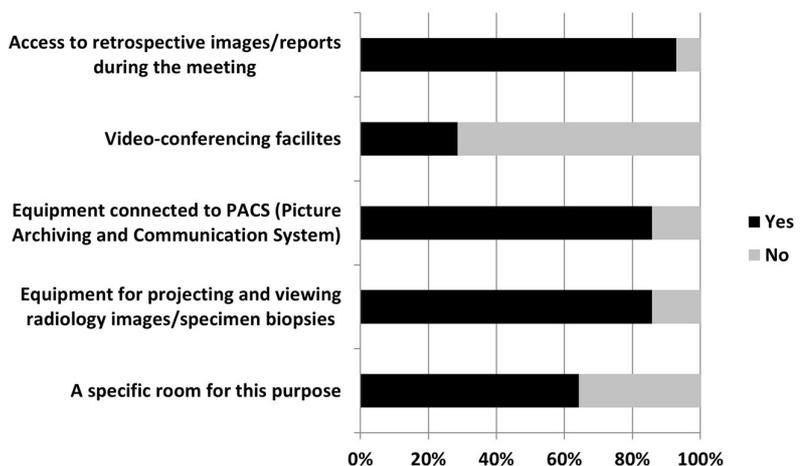


Fig. 3 Case preparation before Paediatric Tumour Board Meetings

multidisciplinary team management of children and adolescents with cancer [5, 10–12]. In Spain, 1000–1200 children aged from 0 to 14 years are diagnosed with cancer every year [8] and are treated in one of the 43 Paediatric Oncology Units of the Spanish National Health System according to national/international clinical trials and recommendations. However, the operation of paediatric MDTs has never been previously investigated in our country.

Institutional MDT: standard of care

In our survey, all respondent group A units (>25 new patients/year) and 74 % of the respondent group B units (<25 new patients/year) have a dedicated Paediatric MDT at their institution. In centres without MDTs, multidisciplinary management is usually assured by “mini tumour boards” in which some of the cancer specialists involved meet for discussion.

According to our survey, all paediatric MDTs meet at regularly scheduled intervals, mainly weekly to bi-weekly, for a minimum length of one hour ensuring timely

prospective case review as recommended [13]. Even though tumour boards serve an important role in patient care and physician education, only 46 % of the centres reported MDT attendance to be mandatory and only 18 % officially recognizes Paediatric Tumour Board attendance. Although a patient list is circulated prior to the meeting in all centres, it is noteworthy that case summaries and reason for consultation are not usually shared prior to the meeting, only 24 % of the respondents were allocated time to attend meetings and 60 % report that cases are discussed even in the absence of some of the specialists directly involved. These data underline the need of protected time in service planning for MDT for all specialists involved and should propose attendance registration for quality assurance. Incentives for attendance such as continuing professional development credits, already in use in other countries, could also improve specialist's involvement, professional education and interdisciplinary communication [14].

A point of major concern is the legal impact of MDTs recommendations on the clinical decision-making. In our study, half of the survey participants stated that Paediatric Tumour Board recommendations were usually perceived as only suggestions, while the other half consider them as mandatory decisions. Individual physicians are ultimately responsible for discussing the treatment options and recommendations of the Tumour Board with the patient and family and then for making the treatment decision [13]. However, most physicians participating in Tumour Boards do not fully appreciate their legal responsibility and potential liability [15]. It has been previously reported that all physicians present at the meeting could be personally accountable for decisions related to their area of expertise [16]. Therefore, clear definition of legal responsibility in Tumour Boards is required and still needs to be defined.

Quality of cancer care delivered by a MDT is only as good as the quality of the clinical decision-making process that precedes it [17, 18]. Whether the case was discussed with accurate and complete history/radiological/pathological information and the clear contribution of the MDT chair and other specialists impacts the quality of the final MDT recommendations and the clinicians' adherence. A specific checklist designed to allow MDT clinical decision-making self-assessment has recently been validated in the management of urological and colorectal cancer [19–21]. However, in our study, none of the centres evaluated the quality of decision-making and only one centre reported monitoring follow-up of MDT recommendations. Those findings suggest that assessment of the clinical decision-making process and follow-up of adherence to recommendations may be crucial in improving the functioning of MDTs.

Virtual MDTs: an opportunity to share expertise among centres

According to RETI-SEHOP statistics [8], there are 43 Paediatric Oncology Units in Spain for 7 Million children (0–14 years old) and a total population of 46.5 Million (2014) [22]; approximately 26 of these units (60 %) treat less than 25 new cases of cancer/year. A high number of centres means that patients need to travel less to receive their treatment, with an improved quality of life. However, this also means dispersion of treatment. Network collaboration through virtual MDTs among different institutions is a potential tool for centres with a lower number of treated patients per year, to share patient's information and treatment management decisions, thus ensuring a homogeneous high standard of care.

In Spain, case consultation with the Spanish Society of Paediatric Haematology and Oncology (SEHOP) disease-specific national coordinators through email is highly frequent. However, MDTs for discussing difficult cases with several institutions using new technology tools (i.e. videoconferencing) are very rare. Several web-based videoconference systems such as Skype[®] or Adobe Connect[®] are widely employed in daily life, but completely underused in most centres as reported in our survey. Videoconferencing would allow face-to-face real-time discussion among involved specialists and could not only speed up the decision-making but also improve the quality of the final recommendation.

Different web-conferencing platforms, such as Adobe Connect[®], are available. They use secure websites to which only invited guests can access. Participants must download the software to the computer which they plan to use before the scheduled virtual MDT, and once the software is downloaded, they only need to click on the URL link provided to access the conference. The main advantage is that they are simple and not expensive. Main disadvantages are, on one hand, that the software must be downloaded onto the participant's computer, that is usually the property of the institution, and it must be frequently updated by technicians with administrator rights. On the other hand, web-conferencing platforms only allow online sharing of documents and face-to-face discussion. Most case consultations need to review imaging (pathology, radiology, etc.) prior to the virtual MDT to ensure best discussion quality. This can be done by sending a CD with all the imaging or by uploading images to a centralized and secure image server. Nevertheless, although current web-conferencing platforms are still to be improved, they may already improve multi-institutional case consultations and improve the quality of cancer care. For example, in Hospital La Fe, Adobe Connect[®] is currently used to allow web meetings

for difficult neuroblastoma case consultations between the centres and the SEHOP national coordinator (Hospital La Fe) and also other tumour-type case consultations within our region.

Virtual MDTs in Europe: ExPO-r-Net

Based on the benefits of MDTs, an extension to the cross-border level in paediatric oncology is currently being developed by the European Expert Paediatric Oncology Reference Network for Diagnostics and Treatment (ExPO-r-Net project), supported by the European Commission. The main goal is to build a European Reference Network (ERN) for Paediatric Oncology in order to reduce the current inequalities in childhood cancer survival and healthcare capabilities in different EU Member States (Chafea Project Grant 2013 12 07) and seek mechanisms to facilitate movement of information and knowledge rather than patients whenever possible.

To extend our survey, a more defined questionnaire has currently been sent to the different paediatric oncology units through the European National Paediatric Haemato-Oncology Societies/Groups (NaPHOS) with the hope of analysing operational differences that may hamper and/or facilitate the implementation of this ERN. This is particularly important due to variable health systems and associated resources across different EU Member States.

In summary, MDTs should be improved at institutional level by clear protected time in service planning for all specialists involved, incentives for attendance such as continuing professional development credits and attendance registration. Clinical decision-making process and follow-up of recommendation adherence should be assessed. Potential legal responsibilities for physicians participating in Tumour Board need to be defined and remain an important issue. Network collaboration through virtual MDTs, using available videoconferencing tools, is already ongoing but needs to be further improved to ensure the best cancer care for all patients. The current ExPO-r-Net project will provide an important platform to improve the visibility of MDTs and will help to solve these challenges at international level.

Acknowledgments We would like to thank all paediatric oncologists who respond to the questionnaire. This work was supported the project Expo-r-Net which has received funding from the European Union in the framework of the Health Programme (2008–2013) grant agreement 2013 12 07.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Research involving human participants: ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. For this type of study, formal consent is not required.

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