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ORIGINAL ARTICLE

General surgeons' views on Oncologic Multidisciplinary Group meetings as part of colorectal cancer care

Francesco Feroci · Elisa Lenzi · Maddalena Baraghini · Stefano Cantafio · Marco Scatizzi

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Abstract This study aimed to assess the current effectiveness of Oncologic Multidisciplinary Groups (OMGs) meetings across central Tuscany through surgeons' reports and their individual perceived benefits on colorectal cancer management. One hundred and sixty-seven general surgeons received a questionnaire with 21 questions covering organizational characteristics of OMGs and the individual perceived benefits of OMGs. The responses were analyzed by hospital setting (teaching vs. community hospital). The reply rate was 62.8 %, and 82 respondent surgeons (49.1 %) were involved in the treatment of colorectal cancer patients. At community hospitals, there was a more frequent participation of medical oncologists, radiation oncologists and pathologists; a less selection of discussed cases was performed; and almost all decisions were inserted into official patient charts ($p < 0.05$). Community hospital surgeons perceived more of a benefit than academic surgeons: OMGs ensure that all treatment options are considered and improve timeliness of care, patient outcomes, patient satisfaction and communication with patients ($p < 0.05$). The surveyed surgeons reported that OMGs offer a modest degree of protection from malpractice but improve communications between colleagues and are an opportunity for personal professional development. Professionals regularly participating in well-conducted and well-organized OMGs for colorectal cancer felt that the multidisciplinary strategy may be advantageous to both patients and caregivers.

F. Feroci (✉) · E. Lenzi · M. Baraghini · S. Cantafio · M. Scatizzi
General Surgery Unit, Misericordia and Dolce Hospital, Ospedale Misericordia e Dolce Piazza dell'Ospedale 5, 59100 Prato, PO, Italy
e-mail: fferoci@yahoo.it

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Introduction

In the initial years of the twenty-first century, both patients and their caregivers are witnessing many important changes in the treatment of solid cancers, and treatment complexity is rapidly increasing. For example, the treatment of colorectal cancer has shifted from a surgically managed condition with some contributions from other disciplines to a condition managed more directly by the contributions of a highly skilled Oncologic Multidisciplinary Group (OMG). In particular, the most important rectal cancer treatment issues are the surgical concept of total mesorectal excision, the value of magnetic resonance imaging in preoperative local staging for rectal tumors, the role of the pathologist in auditing the surgical procedure and defining critical prognostic factors beyond the classical TNM stage, the extended use of preoperative chemoradiation versus radiation alone in localized rectal cancers and the controversial use of postoperative chemotherapy. As a consequence of all of these treatment issues, the rectal cancer treatment is considered a multidisciplinary matter [1]. In the breast cancer field, OMGs have demonstrated treatment management changes in 43–52 % of patients who obtain a second opinion at a tertiary care center [2, 3].

The recognized importance of this multidisciplinary approach to cancer treatment has led to documented efforts to develop OMGs in the United Kingdom [4], Europe [5–7], the United States [8], Asia [9] and Australia [10]. Furthermore, the Commission on Cancer (US) and the American College of Surgeons both require OMGs for the accreditation of health centers delivering multidisciplinary cancer care, and OMGs have been an established part of cancer care in the United States for more than 50 years [11–13].

In Italy, such policies are still being implemented. It was not until the discussion of the 2010–2012 Oncologic National Program that the central government recommended OMGs to "ensure a multi-disciplinary approach to cancer patient by the use of an inter-departmental organization" [14]. In Tuscany, in 2003, a cancer network, the Tuscany Institute for Tumors (ITT) [15], was created. In an effort to guarantee the same treatment standards for the entire population, ITT included 4 teaching and 26 community hospitals. In 2005, the ITT was divided into sixteen oncologic departments with an OMG setup in each for breast, colorectal, upper digestive, gynecological, pulmonary and urologic cancers [16].

Five years after the creation of these pioneering OMGs, this present study aimed to assess the current working of multidisciplinary meetings for colorectal cancer across the four oncologic departments of central Tuscany (a 1.534.252-inhabitant area with a total cancer incidence of 97 × 100,000 per year). The assessment was via survey-based self-reporting from surgeons on OMG effectiveness and their current commitments to multidisciplinary meetings. To the best of our knowledge, this is the first report from Italy about OMG activity and perceptions.

Materials and methods

Oncologic Multidisciplinary Groups, or tumor boards, are defined as regularly scheduled multidisciplinary meetings used to prospectively review individual cancer patients and formulate appropriate management plans using evidence-based multimodal input [17].

After institutional review board of each hospital approval, 167 general surgeons registered with the Tuscany, and Umbria Association of Surgery received an anonymous questionnaire that was, in part, created by the research group of Dr. Frances Wright from Sunnybrook Health Sciences Centre, Toronto, ON, Canada [18], who gave us the authorization for its use and publication of the survey results. The questionnaire contained 21 questions related to colorectal cancer OMGs. The questions included demographic information (age, academic or community setting), organizational characteristics of OMGs (frequency, format, documentation, cases reviewed and professional participation) and the individual perceived benefits of OMGs on a five-point Likert scale. ''Positively ranked'' was considered to be a ranking of 3, 4 or 5 on the five-point Likert scale.

The distribution and collection of questionnaires were carried out between November and December 2010. No money or other gifts were given to responders. As in the Wright article [18], general surgeons were chosen as the target of this survey because they are frequently the first specialists to see patients after a cancer diagnosis and often determine the treatment order.

Data analysis

The Mann–Whitney *U* test was used to analyze the results and individual attitudes by setting of care (teaching hospital vs. community hospital). All analyses were performed with SPSS 13.0 for Windows (SPSS Inc., Chicago, IL, USA). A *p* value <0.05 was considered statistically significant, and $p < 0.01$ was considered highly significant.

Results

A total of 105 replies were received (reply rate 62.8 %) from all the eight community hospitals and the only a single teaching institute in the central Tuscany region. Eighty-two of the respondents (49.1 % of those who received the questionnaire) were involved in the treatment of colorectal cancer patients and reported being a OMG member. Data from these eighty-two surgeons were analyzed.

Surgeon attendance

No statistically significant differences were noted concerning surgeon OMG attendance (Table 1), despite community hospital surgeons participating slightly more, with 53 % of community hospital surgeons versus 27.2 % of teaching hospitals surgeons participating one time per week or one time every 2 weeks.

Other professional attendance

Professional attendance results are reported in Table 2. Community hospital medical oncologists reported regular attendance at 95.8 % of OMGs. At the teaching hospital, oncologist reported regular attendance at 63.6 % of OMGs ($p < 0.0001$). Radiation oncologists reported regular attendance at 79.5 % of community hospital OMGs and reported 51.4 % attendance in the teaching hospital ($p = 0.004$). Community hospital pathologists reported regular attendance of 85.6 % of OMGs, and pathologists reported 69.6 % attendance at the teaching hospital ($p = 0.050$). The radiologist OMG participation rate falls to 51 % in community hospitals and 51.4 % at the teaching hospital ($p = 0.677$). Family physicians, nurses, supportive care providers and psycho-oncologists rarely participate at OMGs meetings regardless of setting differences.

Table 1 Participation frequency

Frequency	Community hospitals ($n = 49$)	Teaching hospital ($n = 33$)	p
1/week	28.5 % (14)	15.1 % (5)	0.072
2/month	24.5 % (12)	12.1 % (4)	
1/month	10.2 % (5)	21.3 % (7)	
<1/month	18.3 % (9)	21.3 % (7)	
Never	4.2 % (2)	15.1 % (5)	
Do not know	14.3 % (7)	15.1 % (5)	

Data are percentages, with number in parentheses, for categorical variables

p* < *0.05 Statistically significant

Organization and patient selection for OMGs

Most of the OMGs (93.8 % for community hospitals vs. 81.8 % for teaching hospitals), without significant setting differences ($p = 0.089$), have a designated medical coordinator. However, a nurse or administrator-designated coordinator is frequently lacking (24.5 % for community hospitals vs. 15.1 % for teaching hospitals; $p = 0.309$). Significant differences ($p < 0.0001$) were noted concerning OMG decision outcomes. In community hospital settings, decisions were registered on a specific schedule in 93.8 % of cases and reported in the patient's chart 83.7 % of the time, whereas in the teaching hospital, this happened in 21.3 and 18.1 % of cases, respectively (Table 3).

Significant differences ($p < 0.0001$) were also noted concerning patients discussed at OMG: In community hospital, all new cases were discussed 67.4 % of the time, while at the teaching hospital, 51.6 % of cases were discussed at the physicians' discretion (Table 4).

Table 3 OMG Organization

	Community hospitals ($n = 49$)	Teaching hospital ($n = 33$)	p
A medical coordinator is always present	93.8 % (46)	81.8 % (27)	0.089
An administrator/nurse coordinator is always present	24.5 % (12)	15.1 % (5)	0.309
OMG decisions are registered on a specific schedule	93.8 % (46)	21.3 % (7)	**0.0001**
OMG decisions are reported in the patient chart	83.7 % (41)	18.1 % (6)	**0.0001**

Data are percentages, with number in parentheses, for categorical variables

***p* < 0.05** Statistically significant

Table 4 Cases discussed at OMG

	Community hospitals ($n = 49$)	Teaching hospital ($n = 33$)	p
All	67.4 % (33)	15.1 % (5)	**0.0001**
Only recurrences	0	3 % (1)	
Only complex or rare cases	6.2 % (3)	24.3 % (8)	
Physicians' discretion	18.3 % (9)	51.6 % (17)	
Coordinators' discretion	0	3 % (1)	
Do not know	8.1 % (4)	3 % (1)	

Data are percentages, with number in parentheses, for categorical variables

***p* < 0.05** Statistically significant

Table 2 Participation of other professionals

	Community hospitals ($n = 49$)			Teaching hospital ($n = 33$)			p
	Regularly	Occasionally	Never	Regularly	Occasionally	Never	
Radiologist	51 % (25)	38.8 % (19)	10.2 % (5)	51.4 % (17)	27.3 % (9)	21.3 % (7)	0.677
Pathologist	85.6 % (42)	10.2 % (5)	4.2 % (2)	69.6 % (23)	9.1 % (3)	21.3 % (7)	**0.050**
Medical oncologist	95.8 % (47)	0	4.2 % (2)	63.6 (21)	6 % (2)	30.4 % (10)	**0.0001**
Radiation oncologist	79.5 % (39)	16.3 % (8)	4.2 % (2)	51.4 % (17)	24.3 % (8)	24.3 % (8)	**0.004**
Family physician	2 % (1)	24.5 % (12)	73.5 % (36)	15.1 % (5)	36.3 % (12)	48.6 % (16)	**0.012**
Nurse	18.3 % (9)	14.3 % (7)	67.4 % (33)	0	45.4 % (15)	54.6 % (18)	0.692
Domiciliary support care	0	18.3 % (9)	81.7 % (40)	0	36.3 % (12)	63.7 % (21)	0.069
Psycho-oncologist	12.2 % (6)	16.3 % (8)	71.5 % (35)	9.1 % (3)	42.3 % (14)	48.6 % (16)	0.087

Data are percentages, with number in parentheses, for categorical variables

***p* < 0.05** Statistically significant

Table 5 Perceived benefits of OMGs

Factor	Perceived benefits, *n* (%)						
	NS	Very little				Very much	*p* value
		1	2	3	4	5	
(1) Ensure that all treatment options are considered							
Teaching hospital, $n = 33$	1 (3.03)	5 (15.15)	3 (9.09)	9 (27.27)	14 (42.42)	1 (3.03)	**0.010**
Community hospital, $n = 49$	0 (0)	1 (2.04)	4 (8.16)	13 (26.53)	13 (26.53)	18 (36.73)	
(2) Incorporate multidisciplinary opinions in patient care							
Teaching hospital, $n = 33$	1 (3.03)	5 (15.15)	1 (3.03)	9 (27.27)	12 (36.36)	4 (12.12)	**0.046**
Community hospital, $n = 49$	0 (0)	1 (2.04)	1 (2.04)	15 (30.61)	15 (30.61)	17 (34.69)	
(3) Augment available research evidence							
Teaching hospital, $n = 33$	1 (3.03)	8 (24.24)	3 (9.09)	9 (27.27)	9 (27.27)	3 (9.09)	0.084
Community hospital, $n = 49$	0 (0)	1 (2.04)	11 (22.44)	11 (22.44)	13 (26.53)	13 (26.53)	
(4) Improve the timeliness of care for my patients							
Teaching hospital, $n = 33$	1 (3.03)	8 (24.24)	8 (24.24)	14 (42.42)	3 (9.09)	0 (0)	**0.0001**
Community hospital, $n = 49$	0 (0)	1 (2.04)	7 (14.28)	18 (36.73)	11 (22.44)	12 (24.48)	
(5) Improve the clinical outcomes of my patients							
Teaching hospital, $n = 33$	1 (3.03)	9 (27.27)	9 (27.27)	9 (27.27)	4 (12.12)	0 (0)	**0.0001**
Community hospital, $n = 49$	0 (0)	2 (4.08)	7 (14.28)	18 (36.73)	11 (22.44)	11 (22.44)	
(6) Improve satisfaction of my patients							
Teaching hospital, $n = 33$	3 (9.09)	8 (24.24)	8 (24.24)	4 (12.12)	3 (9.09)	8 (24.24)	**0.0004**
Community hospital, $n = 49$	1 (2.04)	7 (14.28)	7 (14.28)	18 (36.73)	10 (20.40)	6 (12.24)	
(7) Improve communication of diagnosis to patients							
Teaching hospital, $n = 33$	1 (3.03)	15 (45.46)	8 (24.24)	5 (15.15)	4 (12.12)	0 (0)	**0.0001**
Community hospital, $n = 49$	1 (2.04)	1 (2.04)	10 (20.40)	13 (26.53)	12 (24.48)	12 (24.48)	
(8) Improve communication of treatment options to patients							
Teaching hospital, $n = 33$	1 (3.03)	8 (24.24)	5 (15.15)	7 (21.21)	5 (15.15)	7 (21.21)	**0.0001**
Community hospital, $n = 49$	0 (0)	4 (8.16)	6 (12.24)	10 (20.40)	13 (26.53)	16 (32.65)	
(9) Improve communication with colleagues							
Teaching hospital, $n = 33$	1 (3.03)	5 (15.15)	4 (12.12)	3 (9.09)	5 (15.15)	15 (45.45)	0.813
Community hospital, $n = 49$	0 (0)	1 (2.04)	2 (4.08)	15 (30.61)	15 (30.61)	16 (32.65)	
(10) Opportunity for personal professional development							
Teaching hospital, $n = 33$	1 (3.03)	4 (12.12)	3 (9.09)	4 (12.12)	8 (24.24)	13 (39.39)	0.623
Community hospital, $n = 49$	0 (0)	2 (4.08)	6 (12.24)	13 (26.53)	13 (26.53)	15 (30.31)	
(11) Offer degree of protection from malpractice							
Teaching hospital, $n = 33$	1 (3.03)	9 (27.27)	4 (12.12)	7 (21.21)	8 (24.24)	4 (12.12)	0.343
Community hospital, $n = 49$	1 (2.04)	2 (4.08)	12 (24.48)	12 (24.48)	12 (24.48)	10 (20.40)	

Data are numbers, with percentages in parentheses, for categorical variables

$p < 0.05$ Statistically significant

Surgeon perceptions of OMGs

On the survey, a ranking of 3, 4 or 5 on the five-point Likert scale was considered a "positively ranked" response (Table 5). Surgeons working in community hospital setting, when compared to teaching surgeons, had a greater perception that OMG meetings ensure that all treatment options are considered (89.79 vs. 72.72 %; $p = 0.010$). In addition, community hospital surgeons, when compared to teaching surgeons, also reported a greater belief that OMG decisions incorporate multidisciplinary opinions in patient care plans (95.91 vs. 75.75 %; $p = 0.046$), improve the timeliness of care (83.65 vs. 51.51 %; $p < 0.0001$), improve the outcome of patients (81.61 vs. 39.39 %; $p < 0.0001$) and improve the satisfaction of patients (69.37 vs. 45.45 %; $p = 0.0004$). Moreover, when examining surgeon–patient communication, community surgeons again perceived a greater benefit from OMGs than their teaching hospital colleagues, reporting that OMGs can benefit diagnosis communication (75.49 vs. 27.27 %; $p < 0.0001$) and treatment options (79.58 vs. 57.57 %; $p < 0.0001$). However, OMG improvement in colleague communication was perceived to be improved, independent from the hospital setting (93.87 vs. 69.69 % for community hospital surgeons vs. teaching hospital surgeons, respectively; $p = 0.813$). For both groups, OMGs meeting were considered an opportunity for personal professional development (83.37 vs. 75.75 %; $p = 0.623$), while a modest improvement was perceived in granting additional protection against malpractice (69.36 vs. 57.57 %; $p = 0.343$).

Discussion

After reviewing the reported differences between the two hospital settings, this survey clearly indicated that when OMGs are effectively implemented, the perception of the participating surgeons consequently improves. If at least four different professionals (surgeon, medical oncologist, radiation oncologist and radiologist) regularly participate more than 90 % of the time, if almost all new cases are discussed and if the attendance frequency is at least one time every 2 weeks, surgeons find clear advantages both for patients and physicians.

As in similarly designed studies [18], the main limitation of this survey is the 49.1 % of response. Other groups have previously reported that the response rates of mail surveys of physicians compare favorably with those from telephone and personal interview surveys. Moreover, the non-response bias may be of less concern in physician surveys than in surveys of the general public [19].

In a previous investigation among British breast surgeons, 75.7 % of respondents felt OMG meetings represented an educational experience for their trainees [20]. This result might appear surprising, given that the lowest participation rates and lowest perception of benefit reported on our survey were reported by surgeons from the single teaching hospital we surveyed. A possible explanation for these reported rates may be the more complex organization of the teaching hospital setting. It is easily understandable that six surgery units, three medical oncology units and two radiology departments concentrated in only a single hospital are very difficult to join in the same forum, and it is even more difficult to find common clinical guidelines for diagnosis and treatment of colorectal cancer patients among so many departments and units. However, while international guidelines may lead discussions in OMGs, it is surprising to see such discrepancy in different teams from the same hospital; such discrepancy may be also due to intern competing problems than to doctrinal or political or organizational troubles.

Overall, there are few doubts about the utility of OMGs, but in both the previously cited surveys from Great Britain [20] and Canada [18], more administrative efforts are required to improve OMGs activity. The Great Britain National Cancer Plan published by the UK government in 2000 [21] stressed the importance of multidisciplinary teams (MDT) working in the management of cancer patients and stated that patients treated by specialist teams are more likely to survive by improvement of co-ordination and continuity of care for patients. Two years later, the National Institute for Clinical Excellence (NICE) published a report in which it reported that while the concept of OMG was well developed in breast cancer services in the UK, in practice, the implementation of OMGs was not optimal [22]. A number of barriers to both the initiation and sustainability of OMGs were identified from an Ontario administrator and physician survey. These barriers included the lack of time and financial compensation for attending OMGs, the lack of specialists in community hospitals, the lack of an administrative coordinator to prepare for OMGs and medico-legal concerns, especially if there was disagreement about the patient management plan among OMG participants [23]. Finally, this study demonstrated that one of the most important aspects of OMG implementation is the influence of administrative/organizational factors in providing leadership for OMG initiation and sustainability [23]. Such barriers could easily be translated to Italian OMGs, as the lack of organization is the main explanation for the poor implementation and participation of OMGs in the teaching hospital setting.

Despite OMGs demonstrating benefits such as improved perceived satisfaction and psychological benefits for patients [24], comprehensive treatment decision-making by all involved specialists [2], ongoing education for health care providers [20, 25] and increased access to clinical trials [26], no clear causal relationship between multidisciplinary care and patient survival has been demonstrated, even if some studies are encouraging [27]. Additional studies that examine this aspect are necessary to justify a further expenditure of OMG-implementation resources.

In conclusion, in spite of the limitations of our survey, our results indicate that professionals regularly participating at well-conducted and well-organized colorectal cancer OMGs feel that the multidisciplinary strategy may be advantageous both for patients and caregivers.

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