Tumor Board Practice and Current Approach of Oncologists in Türkiye

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ABSTRACT

Objective: Interdisciplinary cooperation is essential in treating and following up cancer disease. The primary objective of multidisciplinary tumor councils (MDTCs) is to identify the most suitable and effective treatment strategies for cancer patients through the collective decision-making of experts in oncology. MDTC plays a key role in breaking traditional taboos, providing the most up-to-date approach to the patient, sharing responsibility and accountability, and encouraging interdisciplinary communication and collaboration.

Material and Methods: In this study, the perspectives, expectations, and experiences of medical oncologists regarding tumor boards were evaluated. The survey consisted of 10 questions and was conducted as an online survey at the '7th National Immunotherapy and Oncology Congress'. This study was cross-sectional and online. While those who were actively working as medical oncologists and those who wanted to voluntarily participate in the survey were included in the study, those who were not medical oncologists, those who were not actively working, and those who worked in private clinics were not included in the study. Participants were asked various questions about multidisciplinary tumor boards. They were asked about the specialties they most needed on the boards, the other clinics participating in the boards, and the clinics they felt were essential. The necessity of genetic clinics and molecular boards in shaping the future of oncology through molecular assessments was also assessed. The impact of board decisions on patient treatment and management was investigated.

Results: A total of 624 oncologists participated in the survey. The majority of the participants were young oncologists. Most participants worked in tertiary healthcare units, including university hospitals and training and research hospitals. Almost all of the participants stated that they did MDTC. The most frequent and regular councils are; thoracic cancers and gastrointestinal cancers. The most needed and hard to reach branch was the medical genetics department.

Conclusion: Cancer treatment is a complex process that cannot be confined to a single expertise. Multidisciplinary tumor boards (MDTB) are one of the cornerstones of a comprehensive approach to cancer treatment. In multidisciplinary tumor boards, various topics such as medical treatment planning for patients, diagnosis, surgical and radiotherapy planning, side effect management, and palliative care can be examined. MDTB not only provides effective treatment for cancer patients from a broad perspective but also ensures rapid and comprehensive solutions in case of potential complications.

Keywords: cancer, multidisciplinary, tumor boards, oncologist

INTRODUCTION

Cancer disease is a complex process at every stage of diagnosis, follow-up, and treatment. For this reason, interdisciplinary cooperation is essential in treating and following up cancer disease. The main purpose of multidisciplinary tumor councils (MDTC) is to determine the most appropriate and correct treatment methods for cancer patients based on the common decisions of experts in the field of cancer. MDTC plays a key role in breaking traditional taboos, providing the most up-to-date approach to the patient, sharing responsibility and accountability, and encouraging interdisciplinary communication and collaboration. Closer communication between specialists enables the most appropriate treatment decision for the patient and facilitates interdisciplinary education and information exchange. Increased coordination with MDTC expedites decision-making processes and reduces potential differences or omissions in isolated clinical settings. Additionally, councils serve as educational platforms to train the next generation of oncologists by providing ongoing learning, skill development, and mentoring opportunities.
At the center of these councils are indispensable medical oncologists. Our objective was to illuminate the methodologies of medical oncologists concerning this matter, their collaboration with other specialties, and potential areas for cooperation. We aimed to pinpoint the specific types of cancer wherein oncologists, whether operating within institutional environments such as universities or autonomously in peripheral regions, heavily rely on support from other specialties. Moreover, we aimed to discern which specialties effectively collaborate within tumor boards and which ones participate less frequently. We also examined their interactions with medical geneticists in the era of precision oncology. Additionally, we endeavored to delineate the cancer subtypes where medical oncologists encounter challenges when operating independently, contrasting them with those where a multidisciplinary approach has become the standard norm. In our investigation, we assessed the significance of multidisciplinary tumor boards and their assimilation into the daily routines of medical oncology. Through this study, we elucidated the viewpoints of medical oncologists on tumor boards, encompassing their expectations, experiences, and collaborative dynamics with other specialties. In our study, we wanted to evaluate the importance of multidisciplinary tumor councils and their place in daily practice from a medical oncologist’s perspective.

**MATERIAL and METHODS**

The questionnaire consisted of 10 items. Prior to the evaluation of our survey, a pilot study was conducted. A total of 11 participants were included in the pilot survey we conducted beforehand.

After the participants were asked to answer the questions online, they were contacted again for feedback in one way. Participants were asked whether the questions were understandable, whether they created confusion, and questions that could evaluate the survey in terms of words they did not know or understand. Again, the time it took to complete the questionnaire, its purpose and the sensitivity of the answers were evaluated. After the reliability and validity analyzes were completed successfully with our pilot study. It was directed to participants as an online survey at ‘the 7th National Immunotherapy and Oncology Congress 2023’. Our survey was cross-sectional and online. Only medical oncology doctors who attended the congress, worked actively and participated in the survey voluntarily were included in our survey. Medical oncology doctors who were not medical oncology doctors, retired or not actively working, or working in their private practice were not included. The anonymous responses of the participants were analyzed. Questions were asked to the participants about their years of work in oncology, the institutions they work in, multidisciplinary council participants, which type of cancer most frequently requires a council, the branches accompanying the council, and council decisions. A 10-question survey was directed online to 624 participants attending the ‘7th National Immunotherapy and Oncology Congress’. Participants answered the questions by ticking at most one option. The answers given by the survey participants to each question were recorded via the online system and were evaluated statistically. No changes were allowed after participants answered and finalized all questions. None of the participants could see other participants’ answers other than their own. Each participant was allowed to enter the survey application only once (Figure 1).

![Flow chart in the application of the survey](image-url)
RESULTS

The survey was directed to a total of 624 participants, and all of them responded in total. Most of the participants were young oncologists. The majority of them work in tertiary care institutions such as university or training and research hospitals. Only 7% of medical oncologists worked in small private centers in MDTC, which may be difficult for other specialties to access. In the survey, the most frequently needed MDTCs were gastrointestinal cancers and thoracic cancers. Medical genetics was the most frequently needed specialty and caused the most frequent referrals to external centers. The majority of participants were doing MDTC regularly. Participants stated that they often implemented the council’s decisions if they were in conflict with the council.

When the participants’ time in oncology was evaluated; It was determined that 23.88% were >10 years, 23.88% were between 3-10 years, and 52.24% were under 3 years. When examining the institutions where they work, universities and training and research hospitals constituted the majority, with 86.57%. Lower rates were detected in 5.97% of public hospitals and 7.46% in private centers (Figure 2).

When we asked the participants whether multidisciplinary tumor councils were held, they said that most of them answered yes, 95.52%.

However, while 2.99% of the participants answered 'no', the 'referral to an advanced center' option was preferred by 1.49%. Participants who said the council was being held were asked 'Are multidisciplinary councils held regularly?'

When we posed the question, we got a 'yes' answer 94.03% of the time. 'Which multidisciplinary tumor council is held most frequently?' Similar rates were found for the question.

While 33.3% of the participants preferred the thoracic cancers council, 33.3% preferred the gastrointestinal cancer council, 31.8% preferred the urogenital, gynecology, and breast council, while the musculoskeletal tumors council was the least preferred with 1.45% (Figure 3). We asked participants, 'Does the Medical Genetics Clinic routinely participate?' While 20.9% of the participants answered yes, 79.1% answered no. As the second question, we asked the participants who said they attended medical genetics where the genetics specialist came from: 58.4% answered as their own hospital medical genetics specialist, while 41.54% answered as a consultant physician in another center (Figure 4).

We asked the participants a question about council decisions: 'Which recommended treatment do you apply to the patient when the council decision conflicts with the clinical decision?'. While 62.69% of the participants stated that they implemented the council decision, 37.31% stated that they insisted on the clinical decision (Figure 5).

The last question to the participants was, 'Is the treatment that was previously discussed in the council re-evaluated by the council again based on the results of the treatment?' we asked. 82.09% of the participants answered yes to this question, while 17.9% answered no.
Figure 3. Councils Frequently

<table>
<thead>
<tr>
<th>Councils</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torasic Cancers</td>
<td>33</td>
</tr>
<tr>
<td>Gastrointestinal cancers</td>
<td>33</td>
</tr>
<tr>
<td>Urogenital and gynecological cancers</td>
<td>33</td>
</tr>
<tr>
<td>Breast cancers</td>
<td>31</td>
</tr>
<tr>
<td>Brain cancers</td>
<td>2</td>
</tr>
<tr>
<td>Musculoskeletal cancers and sarcome</td>
<td>0</td>
</tr>
</tbody>
</table>

Which council is held most frequently?

Figure 4. Genetics Participates in the Councils

<table>
<thead>
<tr>
<th>Clinic Type</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our centers</td>
<td>59</td>
</tr>
<tr>
<td>Another Centers</td>
<td>41</td>
</tr>
</tbody>
</table>

Where does the medical genetics clinic that participates in the councils participate?

Figure 5. Implemented Decision

In which direction do you use your decisions when the decisions taken in the councils do not coincide with the decisions of our clinic?

- Councils decision: 38%
- Our clinic decision: 62%
DISCUSSION

This study is the first study on MDTC in Türkiye that included the largest number of oncologists. It is also a survey study in which most young oncologists will shape the future. This research showed us the perspective of oncologists in Turkey on the current multidisciplinary tumor councils. The survey provided objective information, such as which type of cancer specifically the oncologists needed the council for and the council decisions taken.

Cancer treatment is a process too complex to be confined to a single area of expertise. It has a great importance to adopt a multidisciplinary approach for the effective and holistic evaluation and treatment of cancer patients. In this context, MDTC is one of the cornerstones of the holistic approach to cancer treatment. Multidisciplinary tumor councils are forums where healthcare professionals from different fields of expertise, such as oncologists, surgeons, radiologists, pathologists, psychologists, and dietitians, come together to evaluate and decide on cancer patients' treatment plans. These councils comprehensively consider the patient's condition and combine their knowledge and experience to determine the most appropriate treatment method. The Multidisciplinary Approach has many advantages. These include the opportunity to evaluate the patient's condition in a more comprehensive and detailed manner by bringing together professionals from different fields of expertise, holistic evaluation of the patient by taking into account the perspectives of many experts, not a single specialist, optimization of the most appropriate treatment protocols for patients as a result of the multidisciplinary evaluation, patient-centered approach treatments, and many different benefits. For example, the PROSPERO study included nearly 3000 small cell lung cancer patients who were evaluated in 2 groups: those evaluated by multidisciplinary tumor councils and those not evaluated by multidisciplinary councils. As a result of the study, it was shown that patients evaluated with MDTC provided increased overall survival and disease-free survival with an increase in the accuracy of pathological diagnoses, accurate staging and increased surgical chances, and a higher rate of patients receiving treatment (1).

For multidisciplinary tumor councils to work effectively, the presentation of professionals from different departments is critical. Medical oncologists, surgeons, radiation oncologists, and radiologists, are the cornerstone of MTC. Apart from the core team, many departments such as dietitians, algologists, nurses, and psychologists work.

In multidisciplinary tumor councils; apart from medical treatment planning of patients, many topics such as diagnosis, surgery and radiotherapy planning, side effect management, and palliative care can be examined. For example, in a study evaluating the complications of immune-related pneumonia in lung cancer patients during the immunotherapy treatment period with a multidisciplinary approach, tumor councils including pulmonology, thoracic surgery, medical oncology, radiation oncology, pathology, and radiology branches were conducted to ensure the management of both diagnosis, treatment and treatment-related complications emphasis was placed on convenience (2). Studies have shown that multidisciplinary tumor councils initiate treatment by evidence-based guidelines more than individual clinician practices (3-5). In a study, the differences in pre-and post-MDTC applications were evaluated in 147 rectal cancer patients. The reported increase in the use of neoadjuvant therapy instead of preliminary surgery in patients after MDTC revealed that the majority of patients applied the decisions recommended by the guidelines instead of individual applications in MDTC (6). It not only ensures the correct treatment decisions for patients evaluated in councils but also provides early treatment opportunities by shortening the time from diagnosis to treatment (7). For example, a study observed that breast cancer cases evaluated in a multidisciplinary tumor council received treatment in a shorter period of 30 days compared to 42 days (7).

In another study, neoadjuvant treatment was administered to 43% of the patients based on a multidisciplinary council decision, which resulted in limited surgeries (8).

In many studies, it has been reported that multidisciplinary tumor councils increase the survival of patients. In a study evaluating patients with lung cancer, it was stated that while the average survival of patients before council was limited to 3.2 months, the average survival of patients after council started increased to 6.6 months (8). In another study, 13722 breast cancer patients were evaluated multidisciplinary. When patients began to be evaluated in the council, it was shown that there was a decrease in absolute mortality of 18% (9).

As understood from the mentioned studies, MDTC is performed more frequently in common diseases. In our study, lung, breast, and gastrointestinal cancers were the leading cancers. However, soft tissue tumors and sarcoma MDTCs remained below 5%. This is because of the richness of cases and increasing experience in common cancers. However, MDTC is performed at a low rate in soft tissue tumors and sarcomas. This is because it is difficult to diagnose, is less common, and has low experience compared to other tumors. These are the reasons why it is less preferred in MTDC councils. However, this type of cancer requires a multidisciplinary approach at least as much as the others. In a study, a 40-question survey about multidisciplinary councils was conducted on 37 MDTC participants in 7 hospitals. In the evaluation, slightly different from our study, it was reported that the councils related to urogenital cancers were the most frequently held, while the least frequent council was the rare tumor council, similar to our study. Again, according to the study, the most common reason for councils was treatment and diagnostic reasons (10). Another issue as important as the holding of councils is the re-evaluation of patients previously evaluated in the council after the treatment decision. We think that patients evaluated after treatment audit the decision-making mechanism of the councils, enable the evaluation of the success of the councils, and increase the training and experience of the team. In our study, 82.09% of the oncologists stated that they were re-evaluated. Similar to our study, another study was reported that patients who received council decisions were then re-evaluated at the council with their results (10). Well, as mentioned above, MDTC has been shown to increase treatment success (5,7-8). What should be done if the clinics participating in the council cannot reach a common denominator due to their common decision and experience? While 63% of the oncologists who participated in our study said they would follow the council's decision, 37%
stated that they would implement their own clinical decision. We think both answers are correct here. This decision will be determined by the council team's experience and trust in each other.

While the councils are important, the duration and frequency of different disciplines coming together are also important. In one study, participants were surveyed about multidisciplinary councils. Participants were asked how often councils are held: 82% said every week, 12% said every 2 weeks, and 4% said once a month. In our survey, 94.03% of the participants stated that councils are held regularly (11). Due to the multifactorial etiology of cancer, the complex interaction between genetics and cancer susceptibility is gaining momentum in the field of oncology. In this context, the role of medical genetics expertise emerges as pivotal, providing insights that revolutionize diagnostic, prognostic, and therapeutic approaches. This approach enables oncologists to customize treatments according to the molecular profile of the tumor, enhancing therapeutic efficacy while minimizing adverse effects. The discussion of not only the tumor's genetics but also associated genetic syndromes and germline mutations in multidisciplinary councils is crucial for treatment planning and genetic counseling, particularly concerning secondary cancers that may co-occur.

In the age of precision medicine, the necessity of genetic experts in cancer treatment is increasing day by day with the increasing use of next-generation sequences. The increasing frequency of large molecular analyses in oncology has formed the basis of molecular councils accompanied by medical geneticists. Targetable mutations, resistance mutations, use of drugs suitable for clinical trials or off-label, and even concomitant genetic syndromes and secondary malignancies can only be resolved through molecular councils managed by a geneticist and clinician. Increasing molecular approaches in oncology have created the need for multidisciplinary molecular councils. In a study evaluating medical oncologists’ perspectives on genetic testing, 43% of the participants stated they would like to discuss the results in a multidisciplinary tumor council that would include geneticists and pathologists (12). These councils can bring innovative treatments to the agenda while offering precision medicine opportunities such as molecularly targeted therapies. In a study evaluating 339 patients who were evaluated from a molecular perspective, the clinical approach was changed and different treatments were recommended to 60.7% of them after molecular councils (13). Again, in a study evaluating 35 similar patients, targeted treatment was recommended in 56.3% of the patients (14). For this reason, genetic experts should also be included in multidisciplinary councils. In our study, the participation of genetic experts in the councils unfortunately remained at a low rate of 20%. When genetic consultations from external centers were examined, 82% of medical oncologists stated that they consulted their patients with a geneticist and showed their insistence on this issue. Although access to genetics experts is limited for various reasons, participation in multidisciplinary councils should be encouraged.

Understanding the need for multidisciplinary approaches in oncology and their advantages, we conducted a survey aimed at evaluating the views of medical oncologists. The survey was conducted at a local university clinic. It underscored the importance of multidisciplinary councils making decisions about the patient from the moment of diagnosis.

As a result, multidisciplinary tumor councils have a critical role in creating personalized, most effective, and safest treatment plans for cancer patients. Our study will pave the way for future, international, and more comprehensive studies that will include different disciplines.

**CONCLUSION**

These councils convene physicians and allied health professionals from various specialties to ensure that the most suitable treatment decisions for the patient are made in a coordinated manner. This collaborative approach aims to enhance patient quality of life through shared decision-making and cooperation among healthcare providers. Our study is the largest survey of medical oncologists on this topic.

Our study once again highlighted the challenges in managing cancer patients and emphasized that sole responsibility should not rest on a single clinic. It underscored the importance of multidisciplinary councils making decisions about the patient from the moment of diagnosis.

As a result, multidisciplinary tumor councils have a critical role in creating personalized, most effective, and safest treatment plans for cancer patients. Our study will pave the way for future, international, and more comprehensive studies that will include different discipline.

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**Writing–review & editing:** Şendağ YASLIKAYA, Ertuğrul BAYRAM

**Ethical approval:** The present study was conducted in strict accordance with the principles outlined in the Declaration of Helsinki. Informed consent was obtained from the participant of this study.

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REFERENCES


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