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The impact of uro-oncology multidisciplinary team meeting (MDTM) on clinical decision-making and adherence to MDTM recommendation: experience from a tertiary referral centre in Malaysia

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Abstract

Background Multidisciplinary team meeting (MDTM) has become an increasingly important part of disease management model, particularly in cancer care. MDTM consists of a group of doctors to provide independent opinions on diagnostic and treatment decisions, as well as personalized therapeutic plan for patients. By selecting the most suitable treatment for patients from multiple perspectives, management by multidisciplinary team (MDT) have been shown to have advantages over traditional treatment models. The objective of this study is to determine the impact of MDTM on the management of uro-oncological cases and adherence to MDTM plans.

Methods We retrospectively collected patients' clinical information discussed in MDTM from 1st January 2021 to 31st December 2022 at our institution. The pre-MDTM treatment plan by the clinicians and the MDTM consensus plans were compared to assess the overall MDTM impact on patient management. Adherence to MDTM recommendations was also analyzed.

Results Data on 432 patients discussed in MDTM from 1st January 2021 to 31st December 2022 were collected and analyzed. Prostate cancer was the most common type of cancer discussed ($n=212$, 48.8%). MDTM had a significant impact on decision-making in 276 (63.6%) cases, with changes to patient management being observed in more than half of all cases. Adherence to MDTM outcomes was high with 383 (90.5%) of patients eventually had treatment according to the MDTM recommendation.

Conclusion The study highlights the importance of MDTM in the management of genitourinary malignancies, particularly in cases where no original plan exists. Patient's compliance and adherence to the MDTM consensus plan are also very encouraging.

Keywords Multidisciplinary meeting, Urology, Oncology

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1 Introduction

Multidisciplinary teams meeting (MDTM) has become an increasingly important part of disease management models, particularly in cancer care. MDTM consists of a group of doctors who meet regularly to provide independent opinions on diagnostic and treatment decisions, as well as personalized therapeutic plans for patients. By selecting the most suitable treatment for patients from multiple perspectives, including financial considerations, MDTM has been shown to have advantages over traditional treatment models in genitourinary cancer cases [1].

Despite the theoretical benefits of MDTM, there is a lack of evidence to support their impact on patient satisfaction and clinical outcomes, except for several reports with heterogeneous designs in different cancer types [1–3]. Additionally, a well-structured MDTM involved discussions by providing health education, specially assigned follow-up for patients, and a learning platform for healthcare providers, focusing on the latest trends in clinical guidelines.

In this study, we aim to investigate pattern of uro-oncological cases discussed in our MDTM, the impact of MDTM on management plan and the adherences to MDTM recommendations in a tertiary center in Malaysia. By doing so, we hope to contribute to the growing body of evidence on the effectiveness of MDTM.

1.1 Objective

This study is to present the pattern of uro-oncological cases discussed in our MDTM, determine the impact of MDTM on management plan, and clinician adherence to MDTM recommendations.

2 Material and methods

Our uro-oncology MDTM service was established at the University Malays Medical Center in 2010. Since then, our MDTM has developed over time into a formal meeting structure that includes prospective record keeping. Traditionally, all relevant teams attended in-person meetings to discuss cases during the MDTM. However, due to the COVID-19 pandemic and our persistently high Uro-Oncology referral patterns [4], MDTM is now held virtually on a weekly basis. Around 10 uro-oncological cases are presented by Urology and Oncology trainees and further discussed during each session to achieve the consensus plans and recommendations. MDTM involves at least one junior consultant representative from Urology, Radiology, Oncology, Pathology, and other medical or surgical teams whenever indicated. MDTM would be considered to have significant impact if the clinician's plan is substantially modified, where there was a modification of treatment approach, or a plan was developed where none previously existed. MDTM would be considered no impact if the clinician's plan was endorsed by MDT.

After the MDTM, patients are subsequently reviewed in the uro-oncological clinic run by Urologists and Oncologists. This is intended to facilitate collaborative clinical decision-making between different specialties, as opposed to unilateral decisions between specialties at different visits in the traditional model.

This study was reviewed and approved by University Malaya Medical Research Ethics Committee with approval number: 202353-12415. No ethical problems were encountered during the study.

3 Results

The majority of Uro-Oncology cases at our center were discussed in MDTM with a total of 432 patients being discussed over a 2-year period. The distribution of cases is shown in Table 1. Prostate cancer was the most common type of cancer discussed ($n=212$, 48.8%), followed by renal cell cancers ($n=107$, 24.6%) and bladder urothelial cancers ($n=64$, 14.7%). Most patients sought medical consultation when their cancer was still localized, but a higher percentage of patients with testicular and prostate

Table 1 Prevalence of genitourinary cancer according to stage (localized/metastatic) and MDT impact on decision-making, patient's adherence to MDT outcome

Type of Urological Cancer	Total, n (%)	Significant Impact, n (%)	Patient's Adherence to MDTM outcome
Prostate	212(48.8)	126(59.4)	184(86.8)
Localized	120(56.6)	77(64.2)	109(90.8)
Metastatic	83(43.4)	49(59.0)	75(89.3)
Renal cell	107(24.6)	71(66.3)	95(88.8)
Localized	78(72.9)	49(62.8)	71(91.0)
Metastatic	29(27.1)	22(75.8)	24(82.8)
Bladder Urothelial	64(14.7)	42(65.6)	60(93.8)
Localized	53(86.9)	35(66.0)	53(100%)
Metastatic	11(13.1)	7(63.6)	7(63.6)
Testis	25(5.7)	20(80.0)	23(92)
Localized	10(40.0)	8(80.0)	10(100)
Metastatic	15(60.0)	12(80.0)	13(86.7)
Upper Tract Urothelial	23(5.3)	17(73.9)	20(87.0)
Localized	16(69.5)	12(75)	14(87.5)
Metastatic	7(30.5)	5(71.4)	6(85.7)
Penile	1(0.2)	0(0)	1(100)
Localized	1	0	1
Metastatic	0	0	0
Total	432(100)	276(63.6)	383(88.7)

cancer presented with metastatic disease, $n=15$, 60% and $n=83$, 43.4%, respectively.

MDTM had a significant impact on decision-making in $n=276$, 63.6% of cases, with changes to patient management being observed in more than half of all genitourinary malignancies. This was largely because many cases initially had no original plan, and the MDTM was able to develop an individualized plan for each patient, often involving cross-referral to oncologists and urology teams. Changes in treatment methods were also observed, such as a shift from surgery to non-surgical interventions or diagnostic biopsies in 15% of cases, e.g., Bosniak 3 renal cyst to Bosniak 2 cyst.

From the study, all clinician can be seen adhered to MDTM outcome. However, further discussion with patient determine the final result of management plan.

Patient adherence to MDTM outcomes was high, with $n=383$, 88.7% of patients with respective genitourinary malignancies following the recommended course of action. However, adherence was found to be lower in patients with metastatic bladder cancer, with only $n=7$, 63.6% of patients following the recommended course of action.

4 Discussion

In this retrospective study, we reviewed Uro-Oncological MDTM in a single Malaysia tertiary referral center. This helps us to gain useful insights and perspective into the genitourinary malignancy cases discussion and the impact and importance of MDTM on the management of Uro-oncological cases, as well as patient's adherence to MDTM outcome.

Our analysis showed that MDTM changed treatment plans in about two-thirds of the cases discussed. In just under a quarter of these, an initial plan proposed by the clinician was changed during the MDTM discussion (e.g., change of treatment method or from a conservative to an interventional approach or vice-versa). In the remaining cases, the treating clinician did not have a definitive management plan, and the MDT developed a proposed treatment pathway. We defined these as impactful as there is change in clinical decision, as the MDTM develops or modifies the treatment plan for an individual patient. Multiple studies demonstrated, changes in patient management plan following MDTM occurred in 4.5–52% of cases [5–9]. For our center, MDTM impact is high as two-thirds of cases had a change or newly developed proposed treatment pathway. It has been suggested that MDTM may indirectly lead to survival benefits through more efficient selection of treatment options for patients and by better case management [10–12]. Similarly, a recent study by Zhu et al. demonstrated improve overall survival (OS) for metastatic castrate resistant prostate cancer (MCRPC) patients that were discussed in MDTM [13].

For the remaining one third of cases discussed, the MDTM has no impact on decision-making. The MDTM endorsed the clinician's proposed management plan without further modifications. Even though there were no changes in management plan, MDTM played an important role in endorsing and validating the management approach [14]. This helps to ensure the tailored proposed treatment for the patients adheres to clinical guidelines [7, 15]. Additionally, the MDTM played an important role in facilitating cross-referral between disciplines, and in some cases for inclusion in appropriate clinical trials.

The study also highlighted the importance of patient adherence to MDTM outcomes, which was found to be high in most genitourinary malignancies, except for metastatic bladder cancer where patient preference played a role. Total number of 15(0.04%) patients were recruited for clinical trials after the MDTM, mainly prostate and renal cancer and this giving a possible better option of management or treatment for patients. Study by Rao et al. showed that 33.3% of Uro-Oncology cases discussed were referred to other disciplines following the meeting [14].

Tanggat et al. has pointed out that urologists may have limited exposure to medical and radiation oncology [16]. Although guidelines exist for optimal treatment selection, differences in patient's characteristics and socioeconomics make it difficult for urologist to formulate individual adapted treatment approach especially in medical or radiation oncology management. MDTM can have impact and change on treatment plan for patients. Combined Uro-oncological clinic might play a role to improve patient's satisfaction and adherence of patients to MDTM consensus plan [17, 18]. Therefore, the author suggested that regular MDTM would be the most efficient solution to assist in formulating an individual adapted treatment plan for each patient. Furthermore, MDTM is a good platform for necessary medical oncology training for urology team and vice-versa [13, 16]. Regular MDTM and combined Uro-Oncological clinics could improve patient satisfaction and adherence, as well as assist in formulating individualized treatment plans for each patient [19, 20].

This is currently the only study in Malaysia looking at the importance and impact of MDTM on Uro-Oncological cases, as well as patient's adherence to MDTM plan. Limitations of the present study include the short time-frame of 2 years of data collection. Besides that, the present study did not assess if the MDTM recommendations translated to actual change in patient care,

or ultimately patient outcome such as survival, as this would require a further prospective study.

5 Conclusion

MDTM has a positive impact on the final consensus plan in the majority of uro-oncological cases in our center. The fact that patient compliance and adherence to the MDTM consensus plan are high is also very encouraging, as this suggests that patients are benefiting from the collaborative approach of the MDTM and are more likely to receive optimal care. It is important to continue to evaluate the impact of MDTM on patient outcomes and quality of life to ensure that this collaborative approach continues to benefit patients in the future.

Abbreviations

MDTM Multidisciplinary team meeting
MDT Multidisciplinary team

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Author contributions
NA was contributed to data collection, analysis and manuscript writing. JL was contributed to data collection, analysis, and manuscript writing. CCA, YWS, AF were contributed to provided technical input and reviewed the manuscript. SK, MS, OTA were contributed to conceptualized the study and provided technical input. All authors reviewed and approved the final manuscript.

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Availability of data and materials
Data and material used to support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate
This study was reviewed and approved by the University Malaya Medical Center Medical Research Ethics Committee (reference number: 202353-12415).

Informed consent
Informed consent was not required in the study.

Competing interests
The authors declared that they have no conflict of interest.

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