

Team establishes positive clinical impact of the Multidisciplinary Molecular Tumor Board

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A collaborative group led by the Department of Clinical Oncology,

School of Clinical Medicine, LKS Faculty of Medicine, the University of Hong Kong (HKUMed) and the Division of Clinical Pathology & Molecular Pathology, Hong Kong Sanatorium & Hospital (HKSH), have published their findings on the clinical importance of the Multidisciplinary Molecular Tumor Board (MTB) in delivering a Precision Cancer Medicine service.

In the rapidly evolving therapeutic landscape of oncology, the MTB provides a much-needed solution; it offers a systematic precision oncology strategy for [treatment selection](#) for patients with [advanced cancer](#). The MTB findings were published in *The Lancet Regional Health—Western Pacific*.

The integration of next-generation sequencing (NGS) and comprehensive gene profiling (CGP) into clinical practice is transforming the field of oncology and enabling precision medicine approaches for [cancer patients](#).

The MTB in Hong Kong is a significant step towards advancing precision oncology in the region, providing genome-informed therapy for patients with advanced-stage and treatment-refractory solid [cancer](#). Combining the expertise of multiple disciplines, the MTB consists of world-class clinicians and scientists to deliver individualized and evidence-based recommendations for patients based on their unique genomic profiles.

In addition, this approach has improved patient outcomes, as demonstrated by the high rate of patients with actionable targets and favorable objective response rates and disease control rates following MTB-guided therapy.

Through its efforts, the MTB has shown that NGS CGP is a critical tool for precision cancer medicine and that integrating an MTB is essential

for the safe and effective implementation of such guided therapy into clinical practice.

Overall, the MTB has set a new standard for precision oncology in the region, demonstrating the importance of interdisciplinary collaboration and personalized treatment strategies in improving patient outcomes. Ultimately, it has paved the way for advances in cancer genomics by narrowing the gap between science and clinical practice.

Research methods and findings

Precision cancer medicine is widely embraced as it offers personalized treatment plans based on the patient's genetic profile. The MTB, co-founded by HKUMed and HKSH, was established in August 2018 and is held monthly, available to all health care and scientific professionals across Hong Kong. The MTB was designed to optimize the interpretation of tumor genomic profiling in Hong Kong.

The MTB team is a powerhouse of experts, including renowned oncologists, cancer specialists, molecular pathologists, cancer biologists, pharmacists, clinical geneticists, bioinformaticians, biostatisticians, and data scientists.

Their wealth of knowledge and experience allows them to recommend personalized treatment strategies to patients with advanced solid cancer by conducting a thorough analysis of genomic variants driving the tumor, assessing the potential for matched therapies, and distinguishing between missense mutations of unknown significance and putative drivers in a 4-step process:

- **Step 1: Patient Registration:** Upon consent, patients' NGS reports will be added to the MTB registry.
- **Step 2: Case Discussion:** the MTB thoroughly examines the

patients' clinical history and gene expression profile.

- Step 3: Personalized Sequence-specific Recommendation: the MTB will provide personalized recommendations based on specific genomic reports to the treating physician.
- Step 4: MTB longitudinal follow-up, the MTB will continuously monitor the patient's progress and treatment effectiveness. This follow-up system ensures the highest quality of care and optimized long-term health outcomes.

In Hong Kong and beyond, the MTB is recognized as a highly effective approach to providing exceptional clinical services to cancer patients. With personalized recommendations based on individual genomic profiles, the MTB strives to bridge the gap between scientific advancements and clinical application, resulting in significantly improved patient outcomes.

The MTB is distinguished by its unwavering commitment to academic excellence, pioneering research, patient engagement, and education. It is a valuable resource for cancer patients and frontline physicians alike.

Dr. Aya El Helali, Clinical Assistant Professor of the Department of Clinical Oncology, School of Clinical Medicine, HKUMed, highlighted, "It is important to know that precision cancer medicine requires a multidisciplinary approach for effective care. The vital role of the MTB is in connecting genomic profiling with targeted therapy. This is especially important as personalized oncology becomes more common."

"This study has shown that treatment-refractory cancer patients who receive MTB-guided recommendations have better treatment response rates. In this study conducted on a Chinese patient population, over 500 alterations were identified, with 64% of [patients](#) benefiting from the MTB-guided approach. This is a significant finding, as it is the first report of its kind in the region. These results have important implications

for [clinical practice](#) and emphasize the importance of MTBs in precision cancer medicine."

This multi-center collaborative study was led by Dr. Aya El Helali, Clinical Assistant Professor, Department of Clinical Oncology, School of Clinical Medicine, HKUMed, and Dr. Edmond Ma Shiu-kwan, Director of the Division of Clinical Pathology & Molecular Pathology, Hong Kong Sanatorium & Hospital.

More information: Aya El Helali et al, The impact of the multi-disciplinary molecular tumour board and integrative next generation sequencing on clinical outcomes in advanced solid tumours, *The Lancet Regional Health—Western Pacific* (2023). [DOI: 10.1016/j.lanwpc.2023.100775](#)

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