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Molecular Genetics MDT, a new experience at Warith International Cancer Institute/Iraq

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Abstract
Introduction: The advances in molecular targeted therapies made huge differences in cancer care. Genome analysis become more frequent during practice; genomic test results need to be discussed interdisciplinary to reach the maximum treatment benefit.
Methods: We established the first multidisciplinary cancer genetics meeting at Warith international cancer institute to discuss patients with different malignancies from a molecular perspective.
Results: From May 2024 to September 2024, 15 cases were discussed in the molecular genetics MDT. In regard to many clinical scenarios like: patient centered care, limitation of treatment toxicity, preserving quality of life, tailoring cancer treatment plan and advanced genetic counselling techniques.
Conclusion: This approach tends to be successful in discussing cancer cases by the involvement of different specialties to reach optimal cancer care. Although, it highlighted the significance of investment in cancer genomic infrastructure. Hence, improving patient's outcome and personalize cancer care.

Keywords: MDT, Cancer Genetics, Interdisciplinary

Introduction

Genomic profiling plays a significant role in cancer therapeutics. When specific gene variants are linked to patients' response to a medication, it provides an opportunity to tailor clinical decisions based on genetic profiles. Personalized medicine allows a comprehensive and prospective approach to treat malignancies especially in advanced stages by utilizing each patients unique clinical, genetic and epigenetic information [1].

The growing recognition of the advantages of personalized medicine are recognized in cancer treatment guidelines mainly upon disease progression or when conventional treatment modalities are not feasible [2].

Here, we discuss the first molecular cancer genetics multidisciplinary meeting at one of main oncology centers in Iraq. Cases are being discussed in regard to there unique genetic and molecular profile.

Methods

The molecular genetics MDT was established at Warith Internation Cancer Institute with the diagnostic services to address the needs of both adults and pediatric cancer patients suspected of having malignancies caused or progressed due to genetic alterations or resistant mutations. The inclusion criteria for the MDT are:

Genetic test results that need targeted therapy to be discussed with clinical pharmacology and other disciplines regarding efficacy, cost effectiveness, and treatment availability.

Early malignancies that need the identification of the benefit of the adjuvant and neoadjuvant therapy.

Cancer cases with genetic results that might contribute with evidence to screen family members or to discuss prophylactic measures.

Results

15 cases were reported to the molecular genetics meeting and reviewed according to diagnosis and scientific evidence. Cases discussed are from different primary malignancies. Breast cancer 33%, lung cancer 20%, lymphomas 13%, colorectal carcinomas 7%, acute leukemia 7%, medulloblastoma 7% and brain stem gliomas 7%. Median age distribution was 59. Female

cases are 9 and male cases are 6.

Discussion and conclusions

Breast and lung malignancies comprise top cases discussed, and this is due to the fact that breast cancer has been the top malignancy in Iraq in females, whereas, lung cancer is considered the first cancer in Iraqi male population [3].

Several clinical insights can be underscored regarding the molecular cancer genetics MDT like, improving treatment and diagnosis accuracy, tailoring management approaches, interdisciplinary collaboration, family risk assessment and enhanced prognostication [4].

Despite these benefits, challenges remain crucial and that is due to the fact that the integration of complex genetic data into routine clinical practice requires ongoing education and training for healthcare providers in different specialties. The cost and accessibility of genetic testing may limit its widespread adoption through different cancer institutes in Iraq, particularly in resource constraint setting. Our findings underscore the importance of the investment in molecular and genetic testing infrastructure and multidisciplinary collaboration to realize the full potential of precision oncology [4].

Molecular and genetics MDT need to be available to many cancer patients treated nationally and the outcome of these meeting need to be translated in details to cancer patients.

Conflict of interest

All authors declare no conflict of interest.

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