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The Implementation of Practice Paradigms and Programmes for Precision Medicine

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Introduction

Cancer prevention, diagnosis, prognosis, and therapies are all impacted by the developing discipline of personalised medicine. The recent introduction of many individualised, molecularly targeted medicines with greater efficacy and/or lower toxicity into mainstream clinical practise demonstrates its significance in clinical management. The discovery of genes that increase the chance of acquiring cancer, such as the BRCA genes in breast cancer, allows screening programmes to identify patients who are "at-risk" of getting cancer and supports their choice of personal risk-reducing behaviours. The use of personalised medicine is becoming more and more significant in the fight against cancer. It is becoming increasingly evident that there are molecularly distinct subtypes of several common cancers, and that each subtype requires a different therapeutic approach. As an example, HER2-positive breast cancer and colorectal cancer with wild-type KRAS are treated with monoclonal antibodies while non-small-cell lung cancer and chronic myeloid leukaemia are treated with tyrosine kinase inhibitors. The effectiveness of different targeted therapies in such a wide range of tumour types suggests that we are entering a time when treatment decisions will be made based on the molecular abnormality profile or "signature" of the tumour rather than the tissue type or anatomical site of origin, which will improve patient prognosis and quality of life [1].

Description

This concise overview concentrates on the function of personalised medicine in the diagnosis, prognosis, and therapy of cancer, as well as its potential in oncology [2]. The three distinct precision medicine practise models created by oncology pharmacists are discussed, along with implementation tactics and suggestions for training the upcoming group of oncology pharmacy professionals. Somatic mutations are unusual in oncology since they can both promote the growth of a tumour and act as a therapeutic target for curing the disease [3]. Interprofessional teams, including pharmacists, debate tumour somatic mutations in precision medicine practise models in order to inform patient-specific treatment. Oncology pharmacists established and oversaw the implementation of precision medicine practise paradigms at the University of Wisconsin, Indiana University, and Moffit Cancer Center. To improve integration into health systems and payment structures, various practise models, including a clinic, a clinical consultation service, and a molecular tumour board were implemented [4].

Despite the differences in practise models, three of them include a clinical pharmacist's leadership, particular therapeutic advice, the acquisition of drugs for off-label use, and a research component. Pharmacy and medical students and residents, these three practise models serve as interprofessional teaching locations, serving as a crucial training resource for these institutions. Multiprofessional participation, institutional support, integration into clinical workflow, and model selection based on payer mix are important implementation tactics. Pharmacogenomic-based dose recommendations for a number of oncolytic drugs used in cancer treatment and supportive care help to reduce potential side effects. We explore a number of resources to help inform cancer therapy options with regard to somatic mutations [5].

Conclusion

The molecular tumour board is an emerging practise model for oncology pharmacists and a mechanism for clinical genomic medicine application in oncology. Oncology pharmacy residents must be trained in genomic oncology, precision medicine and genomics education should be expanded in pharmacy schools, and opportunities for continuing education in precision medicine should be made available to practising pharmacists because pharmacists must be ready to fully participate in contemporary practise.

Conflicts of Interest

None.

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