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Advances in molecular biology have given rise to new hopes in the diagnosis and management of cancers. The earlier idea of “one size fits all” is giving way to personalized therapy. This precision in oncology has a long way to go. The initial steps have showed a lot of promise. The molecular and mechanistic understanding of cancer, i.e., its causes, pathogenesis, and pathology, can lead to interventions in diagnosis and treatment. It could also look at prevention in some instances. Several tools such as the next-generation sequencing and RNA sequencing have greatly improved the capacity to detect predictive and prognostic molecular alterations. Detection of gene mutations, amplifications, and fusions has therefore altered the history of several diseases in both a localized and metastatic setting. This shift in perspective, in which attention is focused on the specific molecular alterations of the tumor, has opened the door to personalized treatment [1]. Genomics and bioinformatics with big data are the pillars of personalized medicine [2]. The identification of tumoral DNA abnormalities using rapid gene sequencing techniques has underpinned the discovery of treatments for certain patients independent of disease histology [3]. Technology-driven improvement of treatment conformity, including advanced image guidance and particle therapy, would help in precision personalized therapy [4].

We could be heading into an era where tumor is analyzed completely and like a bacterial culture report, we could be

guided on the medicines that are likely to be beneficial. In addition, we could, in the future, be guided that current available drugs are not efficacious in a particular cancer which could lead to a lot of savings. This issue focuses on molecular diagnostics and its implications in therapy.

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