TREATMENT DECISION SUPPORT FOR CANCER - VALUE OF GENETIC TESTING.

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The underlying case for each tumor are mutations. Mutations determine whether a tumor is cancerous or benign and an increasing number of treatment options are specifically designed to target tumors with certain genetic changes. In order to decide on the optimal treatment pathway, the tumour associated genetic variants should be determined and discussed in an interdisciplinary tumor board together with all other diagnostics (e.g. CT or PET scans). Today, whole gene sequencing, performed using next generation sequencing (NGS), is the best option to determine the specific somatic mutations present in a tumor. This enables the analysis of many genes in parallel from various sources, including tumor biopsies, cell-free DNA (cfDNA), or circulating tumor cells. We highlight here an ultra-deep sequencing approach applicable for nearly every tumor type, and its use in informing treatment decisions as an integral part of a personalized therapy approach.