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Sommario/riassunto	[Cancer is the second most common cause of death worldwide and encompasses highly variable clinical and biological scenarios. Some of the current clinical challenges are (i) early diagnosis of the disease and (ii) precision medicine, which allows for treatments targeted to specific clinical cases. The ultimate goal is to optimize the clinical workflow by combining accurate diagnosis with the most suitable therapies. Toward this, large-scale machine learning research can define associations among clinical, imaging, and multi-omics studies, making it possible to provide reliable diagnostic and prognostic biomarkers for precision oncology. Such reliable computer-assisted methods (i.e., artificial intelligence) together with clinicians' unique knowledge can be used to properly handle typical issues in evaluation/quantification procedures (i.e., operator dependence and time-consuming tasks). These technical advances can significantly improve result repeatability in disease diagnosis and guide toward appropriate cancer care. Indeed, the need to apply machine learning and computational intelligence techniques has steadily increased to effectively perform image processing operations—such as segmentation, co-registration, classification, and dimensionality reduction—and multi-omics data integration.]