Molecular Biomarkers

A review of multiple applications in clinical care of colorectal cancer

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BACKGROUND: Advancements in tumor profiling have identified multiple molecular biomarkers that influence tumor growth and behavior. Molecular biomarkers provide clinical prognostic and predictive information, which guides treatment decisions and forms the backbone of precision oncology.

OBJECTIVES: This article identifies key predictive and prognostic molecular biomarkers used in the treatment of colorectal cancer and provides greater understanding of their biologic significance and usefulness in guiding treatment decisions.

METHODS: A review of the literature and professional guidelines was performed to evaluate approved molecular biomarkers, targeted agents, and tumor testing modalities used for the management and treatment of colorectal cancer, with an emphasis on treatment decision making.

FINDINGS: Genomic biomarkers are increasingly used for the prevention, diagnosis, prognostication, and management of colorectal cancer. The introduction of targeted agents and advancements in tumor profiling technologies have increased treatment opportunities and improved clinical outcomes for patients with colorectal cancer.

KEYWORDS
molecular biomarkers; targeted agents; precision oncology; colorectal cancer

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