



RESEARCH TOPIC CLI9

Molecular characterization of adverse prognostic features in Head and Neck Cancers across different organs and histologies: from diagnosis to targeted therapies

Research Area

Surgical Area

Clinical Unit name

Department of Otorhinolaryngology, Head and Neck Multidisciplinary Team

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Abstract

Head and Neck Cancers (HNC) arise from critical organs, often requiring multimodal treatment including surgery, radiotherapy, and chemo/immuno-therapy, impacting quality of life. The presence of adverse features, which become known only after surgery, affects the prognosis.

Innovative methods, including less invasive liquid biopsies, are needed for patient stratification and to offer personalized treatments and follow-ups.

The project will employ state-of-the-art techniques (next-gen sequencing, single-cell analysis, spatial transcriptomics) for molecular HNC characterization, enabling to understand HNC microenvironment complexity, predict tumor behavior and identify treatable targets. The existing biobank will be implemented to store tissue and fluid (blood and saliva) samples. Machine Learning tools will be used to integrate molecular and clinical data, to generate personalized treatment algorithms considering each tumor's molecular signature and individual patient characteristics.

Scientific references

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