Serial cell-free tumor DNA in prognosing survival in patients with head and neck squamous cell carcinoma treated with upfront surgery


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BACKGROUND

Detection of persistent circulating tumor DNA (ctDNA) after curative-intent surgery can identify patients with minimal residual disease (MRD) who will ultimately recur.

The clinical validity of ctDNA-based MRD detection, as well as the prognostic impact of ctDNA detection has not yet been sufficiently studied in head and neck squamous cell carcinoma (HNSCC).

OBJECTIVES

We assessed whether postoperative ctDNA could be a biomarker for early detection of MRD, and the prognostic value of ctDNA in resected HNSCC.

PATIENTS AND METHODS

Targeted next-generation sequencing was performed on resected tumor tissues and serial blood samples collected from 41 HNSCC patients treated with upfront curative-intent surgery in SCANDARE (NCT03017573).

All 41 patients displayed trackable mutations on tumor tissues. Serial plasma samples collected from 41 patients at surgery, 34 patients within 14 weeks after surgery, 18 patients at six months, and 22 patients at recurrence were correlated with recurrence-free survival (RFS) and overall survival (OS).

CONCLUSIONS AND PERSPECTIVES

- ctDNA-based MRD detection anticipated clinical recurrence by 9.9 months in 63% of HNSCC patients.
- ctDNA-based MRD detection within 14 weeks after surgery correlated with disease recurrence in multivariate analysis.
- Early detection of ctDNA after curative-intent surgery might be of interest to stratify HNSCC patients for adjuvant therapy.