

# PUBLICATIONS



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## Encyclopedic Tumor Analysis Offers Viable Efficacious Treatment Options in Advanced Refractory Head and Neck Cancers

### Authors

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### ABSTRACT

#### Background

Squamous Cell Carcinomas of the Head and Neck (SCCHN) account for 4.5% of cancer incidences and mortality. Following failure of 2–3 lines of systemic treatments, patients are often considered untreatable and are referred to clinical trials or palliative care. We hypothesized that advanced refractory SCCHN have latent vulnerabilities that can be identified by deep molecular and functional interrogation of the tumor interactome (Encyclopedic Tumor Analysis: ETA) and that these vulnerabilities can be treated in a label- and organ-agnostic manner using standard cytotoxic, targeted and endocrine agents.

#### Method

Freshly biopsied tumor tissue and peripheral blood from 31 patients with advanced refractory SCCHN were obtained for ETA, which evaluated gene alterations, gene expression, in vitro chemoresistance profiling (CRP) of viable tumor cells. Patients received ultra-personalized therapy regimens guided by ETA. Response to ETA-guided treatment was evaluated by radiological scans.

#### Results

Among the 31 patients who received ETA-guided personalized treatment, partial response (PR) was observed in 14 patients and Stable Disease (SD) was seen in 16 patients (Objective Response Rate (ORR) = 45.2% and Clinical Benefit Rate (CBR) = 96.8%). Patients were followed up for a median of 146 days. 30 patients reported Progression Free Survival (PFS) during the duration of follow-up with median PFS of 146 days. There were no grade IV therapy-related adverse events or therapy related mortality. Majority of patients reported qualitative improvements in symptomatic and functional status.

#### Conclusion

ETA identified actionable tumor-vulnerabilities in this heavily pretreated SCCHNN population. ETA guided treatments were safe and efficacious. ETA can offer viable treatment options in advanced refractory SCCHN.