Impact of Next-Generation Sequencing (NGS) on the Selection of Targeted Therapies in Oncology Patients

AUTHORS: Filardo Lopez, H; Fernandez Diaz, E; Inclan Conde, M; Belio Aguera, B; Iraolagoitia Fraile, A; Gonzalez Mena, A; Gomez Echevarria, N; Aguirrezabal Arredondo, AV. Basurto University Hospital

Next-Generation Sequencing (NGS) is fundamental to precision oncology, enabling identification of clinically relevant mutations (ESCAT I/II) to guide targeted treatments. Despite its utility, the real-world impact of NGS in routine practice remains unclear. This study assesses the clinical utility of NGS by measuring the actual proportion of patients accessing targeted therapies.

OBJECTIVES

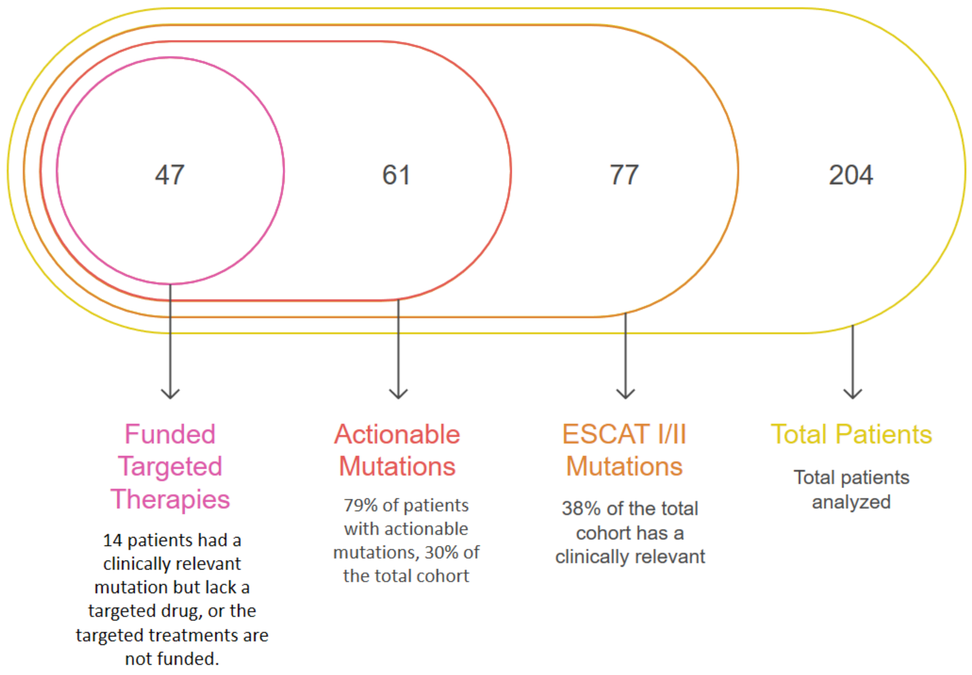
To analyze the clinical utility of NGS in implementing targeted therapies for patients with neoplasms.

MATERIALS AND METHODS

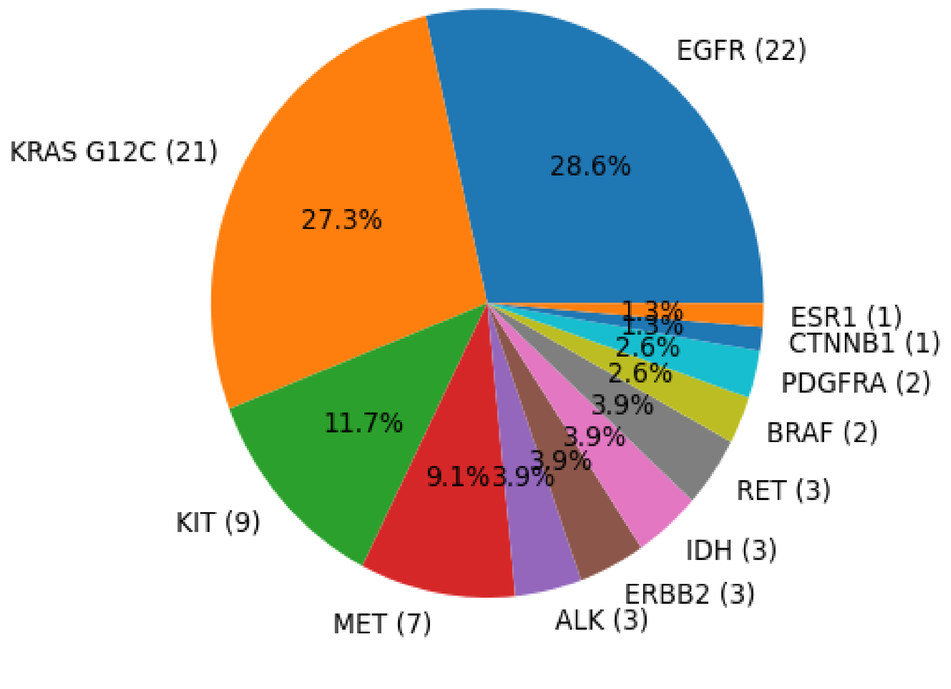
Retrospective observational study of all patients undergoing NGS testing in 2024 at a tertiary hospital. Clinically relevant mutations were classified using the ESCAT scale (I/II).

RESULTS

Patient Mutations and Targeted Therapy Access



Distribution of clinically relevant mutations (ESCAT I-II)



CONCLUSIONS

NGS proved to be a valuable tool for identifying clinically relevant mutations, enabling the implementation of targeted therapies in 30% of the analyzed patients. The majority of patients with actionable mutations (79%) benefited from funded targeted treatments, highlighting the importance of integrating NGS into clinical practice to select the most appropriate therapy for each patient.

2SPD-005