1267P Combination of solid and liquid biopsy genomic profiling for tumor heterogeneity characterization

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Background: Characterization of inter- and intra-tumoral heterogeneity has become a central issue in the implantation of personalized medicine. In this sense, although, the liquid biopsy has been recognized as a promising tool for prognostic, molecular profiling and monitoring of cancer disease, we are still at the beginning of its incorporation alone into the routine oncology practice. In the present study, we evaluate the usefulness of an integrated approach that combines the analysis of both solid (FFPE block) and liquid (blood sample) biopsy, into the clinical routine.

Methods: We analyzed 163 samples of metastatic patients, with different cancers types, using the OncoSTRAT&GO® solution (Biosequence SL, Valencia, Spain through OncoDNA SA, Gosselies, Belgium); that allows i) sequencing of more than 200 genes, identification of 350 genes fusion and evaluation of the expression level of tens of proteins in solid biopsy and ii) sequencing of hotspot mutations of a 27-gene panel in liquid biopsy.

Results: We focus the analysis on those actionable variants that could be detected in both solid and liquid biopsies. A complete concordance of 62.6% was observed between both types of biopsies variants. The minimum variant allele frequencies (VAFs) was found to be 0.1% and 1% in liquid and solid biopsy, respectively. The concordant and discordant VAFs were compare showing similar distributions, no significant statistical differences were found: mean values of 14.5/8.9% (P = 0.79; Mann-Whitney test) and 39.4/29.9% (P= .08; Mann-Whitney test) in liquid and solid biopsy, respectively.

Conclusions: Our findings indicate that the combination of solid and liquid biopsies analysis in clinical practice provides additional information in 37.4% of the cases. Discordant variants cannot be put down to the sensibility of the analysis and consequently should be associated to tumor heterogeneity, low tumor burden and/or treatment response. Our results show the usefulness of an integrated approach, resulting in a broad characterization of the tumor for a better disease management.

Legal entity responsible for the study: Translational Oncology Division, Oncohealth Institute, IIS-Fundacion Jimenez Diaz-UAM, Madrid, Spain

Funding: None

Disclosure: All authors have declared no conflicts of interest.