Retrospective analysis of real-world data to evaluate actionability of a large molecular profiling panel in solid tumors (REALM study)

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Background
Considering the growing interest in precision medicine and genome-driven cancer treatment, several comprehensive genomic profiling (GEP) tests are available. In this context, the capacity to propose at least one targeted therapy given an identified alteration(s) (actionability) and the treatment modification based on the GEP test results (actionability in real clinical settings) are of great interest.

Methods
This retrospective, multicenter French study was conducted among 25 centers who participated in a Free of charge Program between April 2017 and September 2019 for the approved FoundationOne® CDx test based on tissue samples of solid tumors, whatever the disease stage. Data were collected on patient, disease, tumor genomic profile, supported matched therapies in the report and subsequent therapeutic changes.

Results - study population
Among the 416 analyzed patients, the most represented had lung cancer (35.6%), followed by bilateral breast cancer (11.5%) and rare diseases (11.1%).

Results - actionability
The a priori actionability rate was 75.0% (95% CI [70.6-78.9%]) for all patients. After exclusion of molecules only available in clinical trials, a priori actionability decreased to 62.3% (95% CI [57.5-66.8%]). In a real clinical setting, the actionability rate was 17.6% (95% CI [14.2-21.5%]) and significantly associated with metastatic disease (p=0.01, p=0.007 in the multivariate analysis).

Conclusion
This French study provides new information on the real-life actionability of FoundationOne® CDx test based on tissue samples. It confirms that GEP is of interest in routine clinical practice across the course of the disease, in particular for patients with lung cancer and/or advanced disease, although access to innovative matching molecules can still be limited.