Abstract 2437
Clinical utility of complex multi-platform profiling in metastatic cancer patients
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Background
Precision medicine using multi-platform profiling of metastatic cancers is becoming increasingly used. However, its clinical utility in guiding patients’ treatment remains unknown.

Methods
Here we assessed whether molecular profiling helps physicians in their treatment decision by analysing the molecular profile of 1657 advanced cancer patient samples who had failed at least one standard of care treatment using a combination of next generation sequencing (NGS), immunohistochemistry (IHC) and other specific tests. The results were interpreted, and personalized treatments for each patient were suggested. After a minimum of three months, using internet surveys, we investigated how our recommendations influenced treatment choice of the oncologist.

Results
Our data showed that NGS alone provided the oncologist with useful information in 10-50% of cases (depending on cancer type), whereas the addition of IHC/other tests extensively increased the usefulness of the information provided. For patients who were still alive after the provision of the molecular information (76.8%), 60.4% of their oncologists followed our recommendations. Most decisions (93.4%) were made based on the combination of NGS and IHC/other tests, and an approved drug - rather than clinical trial enrolment - was the main treatment choice. Most common reasons given by physicians to explain the non-adherence to recommendations were drug availability and cost, which remain barriers to precision medicine. Finally, we observed that 27% of patients treated with the suggested therapies had an overall survival >12 months.

Conclusions
Our study demonstrates that the combination of NGS and IHC/other tests provides the most useful information in aiding treatment decisions by oncologists in routine clinical practice. However, barriers to full implementation of this approach remain, and include drug availability, cost and low participation in clinical trials.

Clinical trial identification
https://cpaper.cimeetingtech.com/esmo2018/submission/preview/print?publication_id=2437