Molecular Profiling guided treatment in refractory solid tumors: practical impact and clinical responses: Experience of a single center.

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Abstract

Objectives: To describe the therapeutic impact of molecular profiling and the clinical responses of patients whose tumors underlie Molecular Profiling using the MammaPrint Algorithm and E0249 on refractory advanced solid tumors treated at a single center in Lebanon.

Methods: This retrospective single-center observational study was conducted on patients with refractory malignancies with a clear molecular substrate. All patients, whose tumors were identified as suitable for a molecular profile, were included. The profiles included gene expression data obtained by microarray or next generation sequencing. The primary outcome was the overall response (PR, CR, SD, or PD) at treatment initiation, and the secondary outcome was the response at last follow-up.

Results: At the study visit, 31 patients were included. Among them, 17 patients were treated with a molecular-guided therapy, while 14 retained no molecular profile. The latter had a median overall survival of 6 months (95% CI: 1.5-11.6 months) compared to 15 months (95% CI: 6.6-19.4 months) for the former. The median progression-free survival was 3 months (95% CI: 1.5-6.5 months) and 15 months (95% CI: 6.6-19.4 months) for the same groups, respectively (p=0.011). The objective response rate was significantly higher in those patients whose tumors were molecularly profiled (9/17 vs. 0/14, p=0.05).

Conclusion: Molecular profiling as a tool to guide treatment in refractory advanced solid tumors is associated with a significant improvement in the clinical outcome of patients with a clear molecular substrate. Further research is needed to validate these findings in a larger sample size and in different geographic settings.

Translational research session

P258

Treatment Selection

69 patients were treated according to MP results after tumor profiling was performed.

47 pts received combination therapy (67.9%)

29 pts received monotherapy (42%)

75% patients received drugs associated with potential benefit only

95% patients received drugs associated with potential benefit and potential lack of benefit

References

