Clinical relevance of NGS analysis in Endometrial Cancer (EC) management

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Introduction

- Patients with recurrent EC have poor prognosis and available therapeutic options are limited[1]
- No standard of care has been identified as second-line therapy, and several single agents are available, showing response rates from 8% to 27%[2]
- In this setting, increase in demand for alternative and molecular-driven therapies has been raising
- Next Generation Sequencing (NGS) analysis allows to better characterize EC patients' genomic profile and has become an essential tool for EC management[3,4]

Objectives

- To assess the clinical benefit rate (CBR) with the use of targeted therapies based on NGS in EC patients.

Methods

- Formalin-fixed, paraffin-embedded (FFPE) tumor tissue specimens were analyzed by Foundation One® CDx
- if actionable mutations were detected, patients received a targeted therapy based on the NGS assays

Results

- A total of 35 patients underwent NGS assays
- A total of 11 patients received a targeted therapy based on actionable mutations detected with the NGS assays
- All the 11 patients had been heavily pretreated (≥3 prior lines)
- One patient excluded: Covid-19 related death
- CBR of 80% in 8 patients (10% CR, 33.3% PR, 40% SD, and 20% PD)
- Targeted agents:
  - 7 patients treated with agents belonging to the PI3K pathway
    - 3 PR (42.9%)
    - 3 SD (42.9%)
    - 1 PD (14.2%)
  - 3 patients received PARP inhibitor treatment
    - 1 CR (33.3%)
    - 1 SD (33.3%)
    - 1 PD (33.3%)

Patient ID	Line of treatment	Targeted mutation	Targeted therapy	Best response	Months of treatment
1	III line	BRCA1	Niraparib	SD	4 months
2	III line	PIK3CA	Everolimus + Exemestane	PR	17 months
3	II line	FBXW7	Everolimus	PR	9 months
4	IV line	PIK3CA	Alpelisib	SD	ongoing
5	III line	BRCA1	Niraparib	CR	18 months
6	III line	FANCL; RAD51B	Rucaparib	PD	3 months
7	V line	AKT1	Ipatasertib	SD	5 months
8	V line	PIK3CA	Alpelisib	SD	ONGOING
9	IV line	PIK3CA	Alpelisib	PR	13 months
10	IV line	PIK3CA	Everolimus	PD	3 months

Conclusions

- The outstanding CBR of 80% highlights the importance of NGS assays in order to tailor treatments for recurrent EC
- Molecular-driven treatments represent a valid alternative option in recurrent EC
- Further investigation in a broader population is warranted to confirm these results

References

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Disclosure

- first author (Elena Giudice) and presenting author (Maria Teresa Perri) have no conflicts of interest to declare.

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