Introduction/Background The recurrence pattern in BRCA wild-type ovarian cancer (OC) patients relapsing during Niraparib maintenance is still unknown. Moreover, the role of the CA125 as an effective biomarker to detect disease progression in OC patients under maintenance with PARP inhibitors is unclear. We, therefore, explored the pattern of recurrence in this setting of patients, also investigating the concordance between the serological elevation of CA125 (CA125 progression) and radiological disease progression.

Methodology This retrospective study included BRCA wild-type OC patients treated between 2017 and 2022 and recurred during maintenance with Niraparib (first recurrence). All patients had CA125 elevation before starting platinum-based therapy. CT scan was performed every 24 weeks or earlier in case of clinical or CA125 progression. CA125 was performed monthly. We evaluated the concordance between CA125 and disease progression according to Response Evaluation Criteria in Solid Tumours (RECIST) criteria. The pattern of recurrences was also collected. Oligometastases were defined as less or equal to 3 nodules of disease.

Results 91 OC patients progressed after a median recurrence-free interval of 5 months [1–45]. 64 patients of 91 (70.3%) had concordant CA125 and RECIST progression, whereas the remaining 27 (29.7%) had radiological disease progression without CA125 elevation. 3 (11%) of 27 patients with no CA125 progression had a peritoneal site of relapse, while the remaining 24 (89%) had an extraperitoneal recurrence. As expected, among patients with peritoneal carcinoma, only 2 (6.8%) had low CA125 (p<0.001), while 9 (69.2%) patients with oligometastases had a negative marker (p=0.002).

Conclusion Most recurrences after Niraparib might occur as oligometastatic without CA 125 rising. Therefore, CA125 surveillance alone may not be sufficient to detect disease progression and tailor oligometastatic disease approach with surgery or radiotherapy. Larger and confirmatory studies are needed.