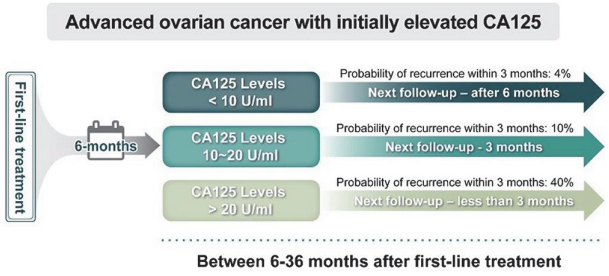
Introduction/Background By analyzing the longitudinal data of serum CA (cancer antigen) 125 data during follow-up, we developed a framework for the dynamic determination of the follow-up interval based on serum biomarkers.
Methodology The longitudinal data of CA125 tests from routine 3-month follow-up visits of advanced epithelial ovarian cancer were retrospectively retrieved. A repeated-measure analysis using mixed model effects was developed to predict the probability of short-term recurrence (within 3 months and 6 months). The probability was calculated for the three predefined risk groups: serum CA125 levels lower than 10 U/ml, between 10 and 20 U/ml, and higher than 20 U/ml.
Results The 346 CA125 test results from 115 patients were subjected to longitudinal analysis. For results less than 10 U/ml, the predicted probabilities that the patient would experience recurrent disease within 3 and 6 months were 4.1% and 14.0%, respectively. For results between 10 U/ml and 20 U/ml, the predicted probabilities were 9.8% and 40.5%, respectively. For results greater than 20 U/ml, the predicted probabilities increased to 40.3% and 61.0%, respectively. Multivariate analysis indicated that the current CA125 level was the sole factor significantly associated with recurrence both within 3 months and within 6 months (all $P < 0.001$).



Abstract 2022-RA-1694-ESGO Figure 1

Conclusion We developed a risk model to predict the short-term recurrence risk of ovarian cancer and proposed a framework for the dynamic determination of the follow-up interval based on the results of CA125 testing.

2022-RA-1711-ESGO OVARIAN EPITHELIAL CELL POPULATION AS A NOVEL CELL AND THERAPEUTIC TOOL FOR SMALL CELL CARCINOMA OF THE OVARY, HYPERCALCEMIC TYPE (SCCOHT)

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Introduction/Background SCCOHT is a rare malignancy affecting young women, with 5-year survival of 10–20%. SCCOHT is caused by inherited and acquired mutations in the *SMARCA4* gene, which encodes the BRG1 protein that participates in SWI/SNF chromatin remodeling. There are few established cell-lines and no models of SCCOHT to test new therapeutics.
Methodology We obtained fresh ovarian surface epithelial cells (OSE) from 2 unique cases: 1) A 14-year-old familial carrier of a SCCOHT-associated *SMARCA4* mutation (*SMARCA4* c.30821+1G>T) who underwent prophylactic bilateral salpingo-oophorectomy, and 2) A 29-year-old with late recurrence of stage IA SCCOHT (*SMARCA4* c.189,2dupC). OSE were passaged *in vitro*. In Case 1, the experiments aimed to determine if the OSE harboring a pathogenic *SMARCA4* mutation will spontaneously immortalize. We interrogated loss of contact-dependent inhibition, ability of the cells to grow independently and form spheroids, and measured senescence-associated beta-galactosidase, cell necrosis and apoptosis. Analyses were conducted in parallel with age-matched benign ovarian cyst OSE. In Case 2, Next-Generation Sequencing for a panel of cancer genes, RNAtranscriptome and Nanostring Digital Spatial Profiling (DSP) were performed. Tumour cells in culture were prepared for injection into immunodeficient mice.
Results *SMARCA4* mutant ovarian cells were passaged 12 times and continue to proliferate in culture, spontaneously formed foci of multi-cell aggregates and spheroids, while non-mutant control cells failed to propagate and expand (Case 1). In Case 2, the mutant *SMARCA4* allele was present in tumor tissue, with a heterozygous germline. There were no additional mutations/gene fusions. Tumor cells were injected subcutaneously in 3 NOD/Scid mice with measurable tumor growth within 4 weeks in all.
Conclusion *SMARCA4* mutant cells associated with familial SCCOHT show characteristics of early neoplastic transformation and represent a unique tool to study pathogenesis of SCCOHT. A PDX model of advanced SCCOHT (Case 2) provides a novel tool for developing therapeutic approaches for SCCOHT.

2022-RA-1715-ESGO ONCOLOGICAL OUTCOMES OF LAPAROSCOPY IN PATIENTS WHO UNDERWENT A CONSERVATIVE FERTILITY TREATMENT IN OVARIAN BORDERLINE TUMOURS

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Introduction/Background Borderline ovarian tumours (BOTs) have an average age at the diagnosis of 40 years and around 30% of patients have not completed their childbearing. Fertility sparing surgery (FSS) is considered the best treatment without an impact on the overall survival rate. However, the safety of laparoscopy for FSS in BOTs remains limited with short follow-up and ESGO and ESMO guidelines indicate open surgery as the standard approach. We aim to assess the long-term oncological safety of laparoscopy in the FSS treatment of BOTs.
Methodology This is a retrospective single-centre study including 34 women who underwent laparoscopic FSS for BOTs, between January 2000 and June 2019 at Hospital Clinic of Barcelona. FSS was considered when the uterus and at least part of the ovarian tissue was conserved. Patients were scheduled for transvaginal ultrasound and blood test including CA125 for 10 years or until loss. Chi-square and Fisher's tests were applied for qualitative variables. Student T-tests or Mann-Whitney tests were applied for continuous variables.
Results Median age was 32 years. Unilateral cystectomy was performed in 15 patients (44.1%), bilateral cystectomy in 2