ESGO Guidelines
and Quality Indicators

FERTILITY-SPARING TREATMENT

Cervical cancer
Ovarian cancer
Borderline ovarian tumours

POCKET GUIDELINES

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ESGO
European Society of Gynaecological Oncology

POCKET GUIDELINES

Based on

ESGO-ESHRE-ESGE guidelines for the fertility-sparing treatment and follow-up in patients with cervical cancer, ovarian cancer, and borderline ovarian tumours

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A strong collaboration was established between the European Society of Gynaecological Oncology (ESGO), the European Society of Human Reproduction and Embryology (ESHRE), and the European Society for Gynaecological Endoscopy (ESGE), aiming to develop clinically relevant and evidence-based guidelines focusing on key aspects of fertility-sparing treatments of patients with gynaecological malignancies. A first Pocket Guideline focusing on endometrial carcinoma was published in 2023. In this Pocket Guideline, three main topics are addressed:

1. The indications of fertility-sparing treatment including conservative surgeries, stage-by--stage and histotype-by-histotype (if required); focusing on ovarian tumours (ie, borderline, non-epithelial, and epithelial cancers) and cervical cancers in which modalities and indications of conservative treatments are highly debated.

2. The optimisation of fertility results and management of infertility if occurred.

3. The aftercare management, which presents major practical questions.

Fertility-sparing surgery, in these ESGO/ESHRE/ESGE guidelines, is based on the preservation of the uterus and at least one part of one ovary, with the aim to achieve (spontaneous) pregnancy. When both ovaries are macroscopically involved (or at greater oncological risk of bilateral spread) in ovarian tumours, isolated uterine preservation (with bilateral salpingo-oophorectomy) is discussed. Tumour histological subtypes and staging are defined according to the WHO Classification of Tumours and the International Federation of Gynecology and Obstetrics (FIGO) staging systems (2021 for the ovary, tube, and peritoneum, and 2019 for the cervix).

The guidelines were developed using a five-step process as defined by the ESGO Guideline Committee:

The objectives of these ESGO/ESHRE/ESGE guidelines are to improve the quality of fertility-sparing strategies in ovarian and cervical cancers and harmonise them to be used by all health professionals involved in the fertility-sparing treatment of patients with cervical cancers, ovarian cancers, or borderline ovarian tumours, across all allied disciplines.

These guidelines exclude the procedures used to protect gonads and maintain endocrine functions of the ovaries (ovarian transposition, gonadotrophin hormone-releasing hormone agonists, etc), combined with ovarian transposition, uterine transplantation, and surrogate pregnancy. Gonadotoxicity induced by systemic or radiotherapies are not covered. These guidelines do not include any economic analysis of the strategies. Any clinician seeking to apply or consult these guidelines is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment.

To ensure that the statements were evidence based, the current literature was reviewed and critically appraised. A systematic, unbiased literature review of relevant studies published between January 2003 and June 2023 was carried out.

The guidelines were adopted if they were supported by sufficient high level of scientific evidence and/or when a large consensus among experts was obtained. An adapted version of the "Infectious Diseases Society of America-United States Public Health Service Grading System" was used to define the level of evidence and grade of recommendation for each of the recommendations:

LEVELS OF EVIDENCE

I Evidence from at least one large randomised, controlled trial of good methodological quality (low potential for bias) or meta-analyses of well conducted, randomised trials without heterogeneity

II Small randomised trials or large randomised trials with a suspicion of bias (lower methodological quality) or meta-analyses of such trials or of trials with demonstrated heterogeneity

III Prospective cohort studies

IV Retrospective cohort studies or case-control studies

V Studies without control group, case reports, expert opinions

GRADES OF RECOMMENDATIONS

A Strong evidence for efficacy with a substantial clinical benefit, strongly recommended

B Strong or moderate evidence for efficacy but with a limited clinical benefit, generally recommended

C Insufficient evidence for efficacy or benefit does not outweigh the risk or the disadvantages (adverse events, costs…), optional

D Moderate evidence against efficacy or for adverse outcome, generally not recommended

E Strong evidence against efficacy or for adverse outcome, never recommended

ESGO would like to thank the members of the international development group for their constant availability, work, and for making possible the development of these guidelines for the fertility-sparing treatment and follow-up in patients with cervical cancer, ovarian cancer, and borderline ovarian tumours (see below). ESGO is also very grateful to the 121 international external reviewers for their participation (list available on the ESGO website).

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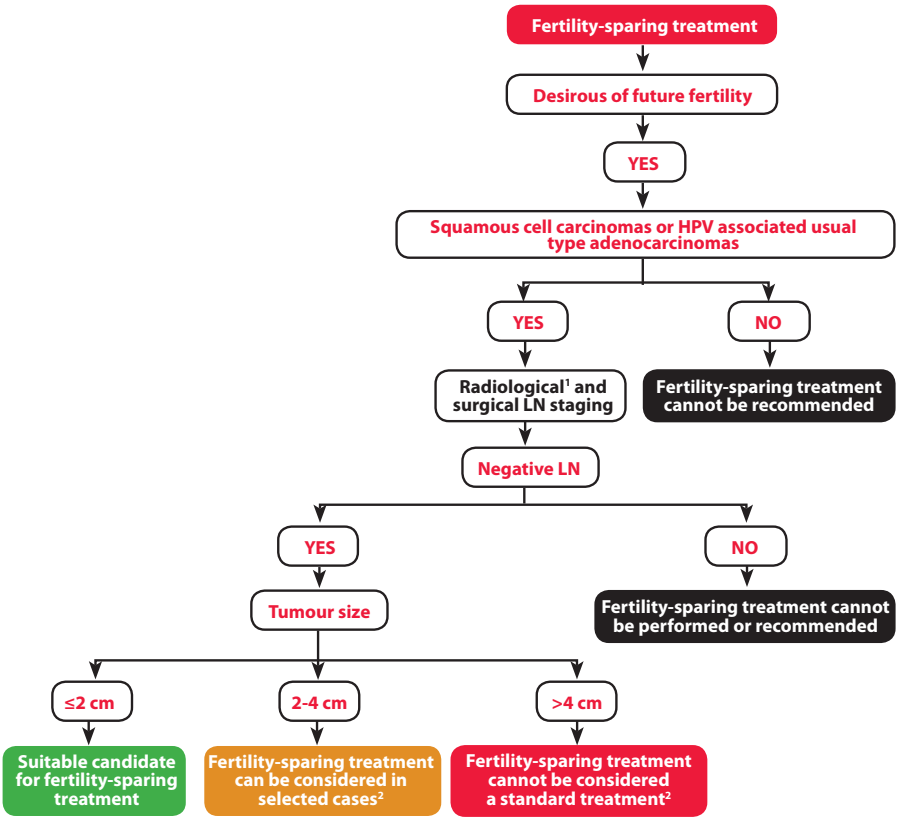
General recommendations

A	Counselling with a reproductive specialist who has an in-depth understanding of the patient and couple's history is recommended before considering fertility-sparing treatment and pregnancy seeking
A	The aim of fertility-sparing surgery is to enable patients to have unassisted or assisted pregnancies with their uterus and their own or donated oocytes.
A	Fertility-sparing surgery and treatment planning should be performed exclusively by teams with a strong collaboration between gynaecological oncologists and reproductive medicine specialists.
A	Pathological expert review is recommended in all patients if the diagnosis and associated treatment could impair fertility.
A	Detailed description of the initial surgery should be provided (endobag, upper abdomen description, etc).

The main steps for the selection of patients with cervical cancer for considering fertility-sparing treatment are described in figure 1.

Figure 1

Selection of patients with cervical cancer for fertility-sparing treatment



LN lymph node

1 Pelvic magnetic resonance imaging (preferred, evaluated by a dedicated gynaecological radiologist) and/or expert sonography are mandatory imaging tests. Radiological assessment by computed tomography or positron emission tomography/computed tomography could be performed to exclude any distant metastatic disease;

2 Pelvic lymph node staging (sentinel lymph node) should always be the first step in each fertility-sparing therapy procedure (except for T1a1 lymphovascular space involvement negative disease). All sentinel lymph nodes from both sides of the pelvis and any suspicious LN should be sent for frozen section. If sentinel lymph node cannot be detected on either pelvic side, a systematic pelvic lymphadenectomy should be performed on that side. Intraoperative assessment of LN status is highly recommended.

Oncologic aspects of fertility-sparing strategies during the initial management of cervical cancer

Oncologic selection criteria

Methods to assess the criteria

A — The mandatory imaging tests to assess oncological criteria are pelvic magnetic resonance (MRI) (preferred; evaluated by a dedicated gynaecological radiologist) or expert sonography. The following information is required: tumour size, depth of stromal invasion, distance between cranial edge of tumour and internal cervical orifice, and any extra cervical extension or suspicious nodes.

B — Radiological assessment by computed tomography (CT) or positron emission tomography/computed tomography (PET/CT) could be performed to exclude any distant metastatic disease.

B — Cervical conisation is the method of choice for staging in early cervical cancer and could be associated with lymph node staging according to the ESGO-ESTRO-ESP guidelines.

B — Conisation should be performed if no gross lesion is noted.

Surgical and pathological criteria

E — Radical trachelectomy with removal of a part of parametria is not recommended for stage IB1 disease fulfilling all the strict inclusion criteria of the ConCerv trial (ie, stage IA2-IB1 as defined by the 2009 FIGO staging system, squamous cell at any grade or adenocarcinoma at grade 1 or 2, tumour size ≤2 cm, no lymphovascular space invasion (LVSI), negative imaging for metastatic disease, depth of invasion ≤10 mm, and conisation margins and endocervical curettage negative for malignancy or high-grade dysplasia.

B — Radical trachelectomy is recommended for stage IB2 disease by use of an abdominal approach (eg, laparotomy or mini-invasive approaches [robotic-assisted or pure laparoscopic approaches]).

B — Lymph node staging strategies for stage IB1 and IB2 diseases should follow the ESGO-ESTRO-ESP guidelines.

A — Negative margins (a non-fragmented specimen, with at least 1 mm histological-free margin from carcinoma or dysplasia) are mandatory.

B

A non-fragmented cone is crucial for pathological evaluation. The base of the cone should encompass the visible gross lesion on the ectocervix with at least 1 mm histological margin. The height of the cone (centre of cone base to vertex) should be at least 10 mm. Cones can be oriented with a suture at the midpoint of the anterior cervical lip (also called the 12 o'clock suture).

B

A negative endocervical biopsy or curettage above the conisation or trachelectomy is required.

C

Pathologists are encouraged to assign a Silva pattern classification for human papillomavirus (HPV)-associated usual-type adenocarcinoma tumours (pattern A is the most favourable; pattern B without LVSI is also favourable).

A

Negative pelvic nodal status is mandatory for any fertility-sparing therapy. For assessing the pelvic nodal staging, ESGO-ESTRO-ESP guidelines should be followed.

D

Pelvic nodal staging is not indicated in T1a1 LVSI-negative tumours that have negative margins on conisation.

B

Intraoperative frozen section of cone margins can be considered to tailor the surgery.

Favourable oncologic selection criteria

B

The following seven criteria should be met before considering fertility-sparing management:

B

- Assignment of patients to favourable selection criteria is based on all clinicopathological variables;

B

- Confirmed histology on cervical biopsy or conisation is consistent with squamous cell carcinoma (all grades) or usual-type HPV-associated adenocarcinoma (all grades) with no more than 10 mm stromal invasion;

B

- Absence of LVSI is a favourable pathological biomarker;

A

- No evidence of any metastasis is required;

B

- Largest measurement of a tumour is 2 cm by imaging or clinical exam;

A

- Free margins on final pathology are mandatory;

B

- No evidence of tumour involvement of the internal cervical orifice and cranial extent of cervical tumour is 1 cm or more from the internal cervical orifice on imaging.

Unfavourable oncologic selection criteria

At least one of the following criteria should be met:

C • Any histological type other than squamous cell carcinoma and usual-type HPV-associated adenocarcinoma (mucinous-type HPV-associated carcinomas, gastric-type cervical adenocarcinoma, mesonephric carcinoma, small-cell neuroendocrine carcinoma, and clear cell carcinoma;

B • Confirmed pelvic nodal involvement, extracervical tumour extension, evidence of tumour beyond the cervical ring, or metastasis;

B • The largest tumour measurement is more than 4 cm by imaging or clinical exam;

B • FIGO stage is IB3 or more;

B • Tumour cranial extent is less than 5 mm from, or involves, the internal cervical orifice or lower uterine segment by imaging;

B • Intraoperative frozen-section assessment of the resected cervical specimen for assessing the upper resection margin reveals a positive margin from the internal cervical orifice with inability to achieve a wider margin;

B • Histologically confirmed endocervical margin, endocervical curettage above resection, or endometrial involvement on final pathology.

Oncologic selection criteria acceptable in selected cases

At least one of the following criteria should be met:

C • Tumour size is 2-4 cm by exam or imaging;

C • Stromal invasion by conisation is more than 10 mm but has negative margins;

B • Evidence of deep cervical stromal invasion on MRI or sonography;

C • Tumour cranial extent is 5–10 mm from internal cervical orifice by imaging;

B • Trachelectomy specimen margin reveals a 5–10 mm tumour-free margin from the internal cervical orifice;

C • Silva pattern C of HPV-associated usual-type adenocarcinoma (data are scarce on pattern B with LVSI).

Neoadjuvant chemotherapy for selected patients with stage IB2 cervical cancer

C — Neoadjuvant chemotherapy has been used by various investigators as an alternative to radical trachelectomy for selected patients with stage IB2 (2-4 cm) cervical cancer.

C — Various chemotherapy regimens have been used to reduce cervical tumour burden and allow for a satisfactory resection of the primary tumour with conisation and simple or radical trachelectomy.

C — Retrospective data suggest that abdominal radical trachelectomy has the lowest recurrence rate for patients with stage IB2 cervical cancer.

C — Ongoing prospective trials with platinum and paclitaxel will clarify the validity of neoadjuvant chemotherapy in fertility-sparing treatment of stage IB2 disease.

B — Including patients with stage IB2 cervical cancer in ongoing trials is encouraged to evaluate the safety of neoadjuvant chemotherapy.

B — Confirming pathological-negative bilateral pelvic nodes (sentinel lymph node or lymphadenectomy) before starting neoadjuvant chemotherapy allows for the most accurate staging and selection of appropriate candidates for neoadjuvant chemotherapy approach.

B — Preoperative imaging with pelvic MRI and whole-body PET-CT is favoured.

Oncologic aspects of fertility-sparing strategies during the initial management of ovarian cancer

General recommendation

B — If bilateral oophorectomy is needed, uterine-sparing surgery can be considered assuming normal endometrial (preferably evaluated by hysteroscopy) and serosal evaluation.

Oncologic selection criteria *(see Table 1)*

Favourable oncologic selection criteria for ovarian preservation

One of the following criteria should be met:

B
- Borderline ovarian tumour all stages (non-invasive peritoneal implants) regardless of ovarian micro invasion;
- Germ cell tumours (all stages);

B

- Granulosa cell tumours stage IA and IC1;
- Sertoli-Leydig cell well-and-moderately differentiated tumours stage IA;
- Low-grade serous and low grade endometrioid carcinomas stage IA and IC1;
- High-grade serous carcinoma stage IA;
- Mucinous carcinoma expansile subtype stage IA and IC1;
- Mucinous carcinoma infiltrative stage IA;
- Clear-cell carcinoma stage IA and IC1.

Unfavourable oncologic selection criteria for ovarian preservation

B

One of the following criteria should be met:

- Invasive epithelial ovarian tumours stage IB and II–IV;
- Low-grade serous carcinoma stage IC3;
- Low-grade endometrioid carcinoma stage IC3;
- High-grade serous and high-grade endometrioid carcinomas stage IC3;
- Clear cell carcinoma stage IC3;
- Mucinous carcinoma infiltrative stage IC3;
- Small-cell carcinoma hyper calcaemic type;
- Granulosa cell tumour stage IB and II–IV;
- Sertoli-Leydig cell tumours well-and-moderately differentiated at stages IB and IC2–IV, and poorly differentiated at all stages.

Oncologic selection criteria acceptable in selected cases

C

One of the following criteria should be met:

- Low-grade serous and low-grade endometrioid carcinomas stage IC2;
- Mucinous carcinoma expansile subtype stage IC3;
- Clear cell carcinoma stage IC2;
- High grade serous and high-grade endometrioid carcinomas stage IC2;
- Mucinous carcinoma infiltrative stage IC1 and IC2;
- Granulosa cell tumour stage IC2 and IC3;
- Sertoli Leydig cell tumours, well differentiated and moderately differentiated at stages IB and IC1;
- Tubo-ovarian carcinoma (unilateral) or serous tubal intraepithelial carcinoma in patients younger than 40 years with high-risk predisposition germline mutation.

Table 1

Indications for *in vivo* ovarian tissue preservation in ovarian neoplasms according to the histological type and the stage of the disease

STAGE	EPITHELIAL OVARIAN NEOPLASMS								NON-EPITHELIAL OVARIAN NEOPLASMS				
	BOT[1]	LGSC	LGEC	MC_{exp}	CCC	HGSC	HGEC	MC_{inf}	GCT[2]	SCC	GrCT	SLCT[3]	SLCT[4]
IA													
IB													
IC1													
IC2												##	
IC3												##	
II-IV									#				

favourable oncologic selection criteria for fertility-sparing management as defined in the text (based on the favourable survival and/or recurrence rates observed in cohorts and/or comparative studies (radical versus conservative) of patients treated with such characteristics).

oncologic selection criteria acceptable in selected cases (insufficient or conflicting data to evaluate accurately the results of the ovarian preservation in this subgroup of patients).

unfavourable oncologic selection criteria for ovarian preservation (poorest survival observed in patients having an ovarian preservation in these subgroups. It could be related to the use of ovarian preservation itself and/or the natural history of the disease (whatever the preservation or not of the ovary) in these patients having poorest prognostic factors).

[1]non-invasive peritoneal implants; [2]including immature teratoma, dysgerminoma, Yolk-sac tumours; [3]well and moderately differentiated; [4]poorly differentiated; #for grade 2-3 immature teratoma stage II-IV, fertility-sparing data are limited; ## for Sertoli-Leydig cell tumour stage IC2-3, fertility-sparing data are limited.

BOT borderline ovarian tumour; CCC clear cell carcinoma; GCT germ cell tumour; GrCT granulosa cell tumour; HGEC high-grade endometrioid carcinoma; HGSC high-grade serous carcinoma; LGSC low-grade serous carcinoma; LGEC low-grade endometrioid carcinoma, MC_{exp} mucinous carcinoma with expansile invasion, MC_{inf} mucinous carcinoma with infiltrative invasion; SCC small cell carcinoma; SLCT Sertoli-Leydig cell tumour.

Salpingo-oophorectomy vs. cystectomy in selected cases of borderline ovarian tumours

B

Bilateral ovarian cystectomy with macroscopic healthy ovarian tissue sparing in bilateral serous and seromucinous borderline ovarian tumours can be considered.

B

Unilateral salpingo-oophorectomy and cystectomy with macroscopic healthy ovarian tissue sparing are both acceptable strategies for unilateral serous and seromucinous borderline ovarian tumour. In case of cystectomy, patients should be counselled about the risk of local and ovarian recurrence of up to 30% with no effect on overall survival, but better fertility results.

Optimisation of fertility results and infertility management

Reproductive medicine specialist consultation

B

Individuals who wish to preserve their fertility should be offered reproductive counselling before the beginning of any oncological treatment.

A

The reproductive medicine specialist should be part of the treatment decision process and be consulted when treatment plans are changing or family planning starts. Creation of a specific multidisciplinary team is encouraged.

Reproductive medicine specialist consultation in patients with ovarian cancer and high-risk genetic predisposition

A

Patients who carry a high-risk genetic predisposition for ovarian cancer should have similar fertility preservation counselling compared with non-carriers (see Table 1), including the information about transmission to the offspring.

B

If fertility preservation is considered, ovarian stimulation followed by oocyte or embryo cryopreservation is the treatment of choice in patients who carry a high-risk genetic predisposition as it does not increase the individual risk of developing new hormone-dependent cancers.

C

There are no data on oncological safety of ovarian tissue reimplantation in patients who carry a high-risk genetic predisposition, but cryopreservation of ovarian tissue might be considered.

B

After completion of family planning or at the recommended time of pelvic prophylactic surgery, salpingo-oophorectomy, with or without hysterectomy, should be performed in patients who carry a high-risk genetic predisposition.

C

Patients who carry a high-risk genetic predisposition could be referred for preconception and preimplantation genetic-testing counselling.

Evaluating ovarian function in patients before cancer treatment

B

The assessment of ovarian reserve should be done with the same methods as in women without cancer (eg, serum anti-Müllerian hormone and antral follicle count), although the interpretation of results might be difficult in patients with ovarian tumours.

D

The age of the patient is more important than anti-Müllerian hormone and antral follicle count in planning fertility-sparing treatment. Pretreatment ovarian reserve markers alone should not be used as treatment guide for fertility-sparing surgery.

Fertility preservation methods in first-line treatment settings

Ovarian tumours

C

Ovarian stimulation followed by egg retrieval can be offered to patients with ovarian cancer with favourable prognostic factors considering histological diagnosis, hormone sensitivity, cancer stage, and oncological prognosis (see Table 1).

D

Ovarian stimulation followed by egg retrieval for fertility preservation is not recommended before final histological confirmation of a possibly malignant or borderline ovarian mass.

B

For primary ovarian neoplasms, it is recommended that ovarian stimulation and oocyte cryopreservation be performed after completing staging surgery and determining the histological diagnosis, hormone sensitivity, cancer stage, and oncological prognosis (see Table 1).

C

Ovarian tissue freezing and immature oocytes retrieval for *ex vivo in vitro* maturation and further mature oocyte vitrification during surgery in case of bilateral oophorectomy could be offered.

D

Ovarian stimulation followed by oocyte retrieval is not contraindicated in patients previously treated for stage I ovarian borderline tumours, even in cases of abnormal-appearing residual ovary that will be subjected to stimulation.

D

Ovarian stimulation followed by oocyte retrieval (even in cases of abnormal--appearing residual ovary) is not contraindicated in patients with advanced stage borderline ovarian tumours, as long as there has been a complete resection and pathological evaluation (confirming non-invasive implants) of visible peritoneal lesions.

B

The timing of ovarian stimulation and egg retrieval when adjuvant chemotherapy for ovarian cancer is planned depends on multidisciplinary discussion and can be performed ideally before chemotherapy or in rescue at least 6 months after chemotherapy (post-treatment fertility preservation).

D

In cases of borderline ovarian tumour, biomarkers of the tumour (BRAF, oestrogen receptor, KRAS, etc) should not be used as a contraindication for considering ovarian stimulation (indication and protocol).

B

In cases of low-grade serous or ovarian endometrioid adenocarcinoma or granulosa cell tumour, the ovarian stimulation protocol based on co-treatment with aromatase inhibitors should be a first choice *(see Table 1)*.

Cervical cancers

C

For all patients with cervical cancer eligible for fertility-sparing management, ovarian stimulation followed by oocyte retrieval can be discussed for women without ovarian involvement treated by radiotherapy, brachytherapy, or hysterectomy in accordance with the legal country-specific regulations regarding surrogate pregnancy.

C

Special attention is needed for ovarian stimulations and transvaginal oocyte retrieval in the presence of active cervical neoplasia. Transvaginal puncture and retrieval might be possible in selected cases with minimal tumour involvement. However, it should be avoided in cases with extensive upper vaginal disease to minimise the theoretical risk of iatrogenic cancer spread during the procedure. A transabdominal laparoscopic approach or open approach might be an option. Transabdominal approach for oocyte retrieval has been suggested as a safe and efficacious procedure.

Fertility preservation methods in case of recurrence

A

Fertility evaluation for patients with apparent recurrent, borderline ovarian tumours who wish to preserve their fertility is mandatory before any treatment in gynaecological oncology centres with comprehensive multidisciplinary expertise within a multidisciplinary team, including a reproductive medicine specialist.

C

Ovarian stimulation followed by oocyte retrieval in cases of recurrent stage I borderline ovarian tumour with no evidence of peritoneal disease is feasible before potential definitive surgery.

C

Ovarian stimulation followed by oocyte retrieval in cases of recurrent advanced stage borderline ovarian tumour is feasible as long as there has been a complete resection and pathological evaluation (confirming non-invasive implants) of visible peritoneal lesions and normal-appearing abdominopelvic imaging (CT or MRI scan) suggesting the absence of obvious implants before the eventual stimulation.

B

For malignant germ cell tumours, fertility preservation strategy should be discussed on an individual basis in a multidisciplinary team for women previously treated for an immature teratoma and presenting a recurrence highly suspicious of benign teratoma or growing teratoma syndrome.

D

In cases of a suspected recurrence of sex cord tumours, fertility preservation strategies should not be considered.

Evaluating ovarian function

B

It is important to recognise the limitations of serum anti Müllerian hormone concentrations and antral follicle count as predictors of pregnancy, either through natural conception or after assisted reproductive technology (ART).

C

Regular measurement of serum anti-Müllerian hormone concentrations after cancer treatment can be used to indirectly estimate the degree and evolution of the ovarian follicular pool and ovarian response to stimulation.

What should be offered to patients after treatment?

Desire for immediate pregnancy

B

If fertility-sparing surgery did not affect the possibility of unassisted conception, patients are advised to attempt spontaneous conception for at least 6 months before being referred to a reproductive medicine specialist. Patients with a history of infertility or inability to conceive spontaneously should be referred to a reproductive medicine specialist as soon as possible.

No immediate pregnancy desired

C

Patients treated for ovarian tumours could be referred to a reproductive medicine specialist for counselling.

B

In case of a previous history of infertility or inability of natural conception due to surgery, patients should be referred to a reproductive medicine specialist to discuss oocyte or embryo freezing.

B

Patients who underwent fertility-sparing surgery for borderline ovarian tumours, including those with micropapillary or microinvasive features (who still have at least one ovary), should be advised about the availability of reproductive medicine specialists and referred as needed *(see Table 1)*.

B

Patients who underwent fertility-sparing surgery for ovarian cancer (who still have at least one ovary) and are considered to have a favourable oncological prognosis should be advised about the availability of reproductive medicine specialists and referred if applicable, taking into account histological diagnosis, hormone sensitivity, stage, and oncological prognosis *(see Table 1)*.

Oocyte vitrification

B When oocyte vitrification is considered after fertility-sparing surgery alone, ovarian reserve assessment should be performed at least 6 months after surgery to allow recovery.

B When oocyte vitrification is considered after chemotherapy, ovarian reserve assessment should be performed after at least 6 months.

Desire for a pregnancy and beyond

When should oncological authorisation be granted?

A All patients with borderline ovarian, epithelial, or non-epithelial tumours should be advised according to the age of the patient, stage of disease, pathology, unilateral or bilateral localisation of the tumour, and mode of surgery (eg, cystectomy vs oophorectomy).

C Patients with cervical cancer treated with any kind of surgery (eg, trachelectomy or conisation) are advised not to attempt pregnancy within the first 6 months after surgery.

B Spontaneous pregnancies can be encouraged in patients with a borderline ovarian tumour immediately after the fertility-sparing surgery.

B Patients needing fertility treatment can be referred for ART in cases of a low-stage borderline ovarian tumour immediately after fertility-sparing surgery.

B Patients needing fertility treatment can be referred for ART in cases of advanced-stage borderline ovarian tumour after complete resection and absence of invasiveness of implants immediately after fertility-sparing surgery.

C Patients with a borderline ovarian tumour at high risk of relapse could be referred immediately after fertility-sparing surgery for oocyte or embryo cryopreservation.

C Patients with epithelial ovarian cancer might be advised to become pregnant 1 year after the completion of treatment with negative follow-up.

C Patients with non-epithelial, early-stage ovarian cancer might be advised to become pregnant after the first 6 months of a negative follow-up after the fertility-sparing procedure.

C For patients with non-epithelial ovarian cancer needing fertility treatment, ART can be performed after the first 6 months of a negative follow-up after the fertility-sparing procedure.

A Regardless of cancer type, patients should be advised that they are not limited to one pregnancy.

Cervical cancer

Frequencies of follow-up after fertility-sparing management

B — Follow-up is the same as for any patient with cervical cancer; namely, every 3–4 months for 2 years, every 6 months for another 3–5 years, and then annually.

C — Reduction of frequency of follow-up could be proposed in cases of negative HPV testing after conservative surgery.

Follow-up procedures after fertility-sparing management

B — Physical examination should be performed, including bimanual pelvic examination every 3-4 months for the first 2 years, every 6 months thereafter until the fifth year, and then annually. Cytology plus HPV testing should be performed after 6 months, then annually.

B — Colposcopy should be performed in cases of abnormalities at cytology and a biopsy sample should be taken for positive results from HPV testing.

B — HPV vaccination should be encouraged.

A — MRI (preferably evaluated by a dedicated gynaecological radiologist) is mandatory at 6 months and 12 months, and then when clinically indicated thereafter.

C — Transvaginal ultrasonography, with or without transrectal ultrasonography, is an option when performed by an experienced sonographer.

B — PET-CT can be considered in cases of suspicion of a recurrence.

C — There is no evidence to recommend the routine use of squamous cell carcinoma antigen in follow-up.

Specific requirements for the follow-up during the pregnancy and maternal surveillance

B — A surgery requiring a large cervical excision should be accompanied by a permanent cerclage.

B — Progesterone supplementation in pregnancy after fertility-sparing surgery for cervical cancer is recommended to prevent preterm birth.

B — Patients with and without a permanent cerclage should be assessed for cervical incompetence during pregnancy by an experienced obstetrician.

B — Patients treated only with a large or repeat conisation should be evaluated for cervical incompetence or competence by an experienced obstetrician.

B MRI can be performed when clinically relevant.

B Follow-up visit consists of a physical examination and cytology plus HPV testing (co-testing) in early pregnancy unless it was performed within the last year.

B Colposcopy should be performed when indicated from cytology or HPV testing and from clinical implications.

B Transvaginal ultrasonography, with or without transrectal ultrasonography, should be performed by an experienced sonographer when clinically indicated.

A Elective caesarean section should be considered for delivery in patients with history of invasive cervical cancer.

B Breastfeeding is recommended, as in the general population, and should not be discouraged.

Need for completion surgery after childbearing

D Completion surgery after childbearing with no evidence of disease is not recommended.

B Hysterectomy should be offered only in cases where follow-up is not feasible (cervical stenosis and patient incompliance) and in cases of persistent, high-risk, HPV-positive test results.

Indication and modalities for hormone replacement therapy after completion surgery or bilateral salpingo-oophorectomy plus uterine preservation

C Patients with premature ovarian insufficiency after treatment of squamous cell cervical cancer can be offered hormone replacement therapy after discussing risks and benefits.

C In patients with adenocarcinoma positive for oestrogen receptors, hormone replacement therapy could be offered on an individual basis after thorough discussion.

Ovarian cancer

Frequencies of follow-up after fertility-sparing management

B Follow-up is recommended every 3–4 months for 2 years, every 6 months for another 3–5 years, and then annually for at least 10 years.

B Follow-up should consist of physical examination and ultrasound examination by an experienced ultrasonographer.

B

Pelvic and abdominal CT or MRI should be performed at 6 months and then annually until the fifth year.

B

Measurement of cancer antigen-125 concentration or other tumour markers according to histotype (ie, inhibin B, anti-Müllerian hormone for sex cord stromal tumours, β-human chorionic gonadotrophin, α-fetoprotein, or lactate dehydrogenase for germ cell tumours) is only recommended when initially elevated or when presurgical markers are missing.

B

PET-CT is only indicated in cases of suspicion of recurrence.

Surveillance during pregnancy

B

Transvaginal and abdominal ultrasonography should be performed by an experienced sonographer in early first and second trimester of pregnancy.

D

Follow-up of tumour markers is not recommended during pregnancy.

B

Breastfeeding is recommended as in the general population and should not be discouraged.

Need for a completion surgery after childbearing

D

Routine completion surgery (removal of remaining ovary and tube) is not recommended in patients with borderline ovarian tumours.

B

Routine completion surgery is recommended in patients with a family history of genetic high-risk epithelial ovarian tumours.

C

Routine completion surgery could be considered on a case-by-case basis in patients with epithelial ovarian tumours.

D

Routine completion surgery is not recommended in patients with germ cell tumours.

C

In all other non-epithelial tumours, routine completion surgery could be offered on a case-by-case basis.

B

In patients with granulosa cell tumours, additional hysterectomy must be considered.

Indications and modalities for hormone replacement therapy after completion surgery or bilateral salpingo-oophorectomy plus uterine preservation

B

Hormone replacement therapy can be offered after completion surgery to patients with borderline ovarian tumours and ovarian cancer after discussing risks and benefits and taking into account their histological subtype.

NOTES

Access full ESGO Guidelines: www.esgo.org/explore/guidelines

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