



Virtual Conference | 19-23 Οκτωβρίου 2020

Fertility Preservation in Cancer patients

Current Trends

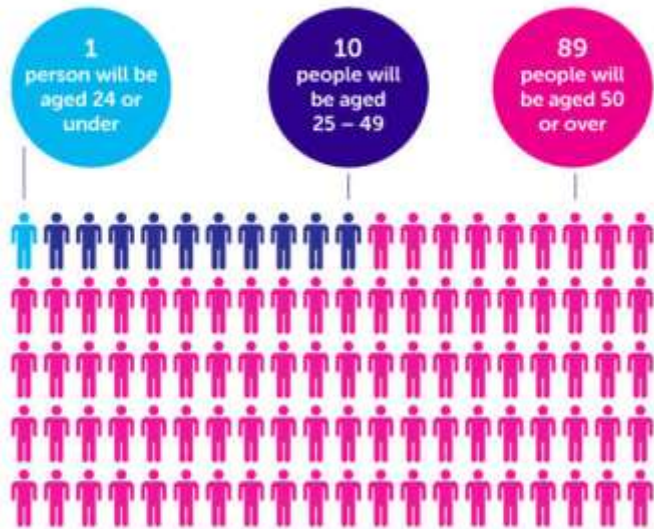
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Fertility Specialist

EMBRYO
CLINIC

Cancer Incidence in Reproductive Age

For every 100 people diagnosed with cancer:



TOGETHER WE WILL BEAT CANCER
cruk.org



- **>15,000 AYAs diagnosed with cancer annually in Europe.**
- Survival rates increasing due to novel oncological treatments.
- 5-year survival rate for pediatric cancer patients ~ 80%.

Oncofertility

Greek & International Networks

- **International Network on Cancer, Infertility and Pregnancy (INCIP)**
- **European Society of Gynaecological Oncology (ESGO)**
- **American Society of Clinical Oncology (ASCO)**
- **ESMO guidelines for FP**
- **International Society of Fertility Preservation (ISFP)**
- **Greek Society of Fertility Preservation (EEΔA)**



Surgical Innovations

Minimal access surgical methods :

1. Laparoscopic

2. Robotic – da Vinci



Laboratory Innovations

Novel Cryopreservation techniques

Vitrification

1. Oocytes
2. Embryos
3. Ovarian tissue
4. Sperm



IVF Innovations

High Success !!

High Hope !!

Male patient

Evaluation of gonadotoxicity risk

Wish to preserve fertility

Yes

No

Able to ejaculate by masturbation

Not able to ejaculate by masturbation

Assisted ejaculation technique

Sperm in the semen

No sperm in the semen

Sperm in the semen

After exclusion of hypogonadotropic hypogonadism

TESE/microTESE

Sperm cryopreservation

Fertility Preservation in Males

ESMO 2020

- **Spermatogenesis** is maintained during the entire duration of a man's life.
- Testicular stem cells differentiate into spermatogonia, which will eventually become spermatozoa under the process of spermatogenesis.
- **Spermatogonia** in the testes are extremely sensitive to radiation, regardless of age.
- Highest risk of developing permanent sterility: adolescents with testicular cancer, leukemia and Ewing's sarcoma.

Fertility Preservation in Males

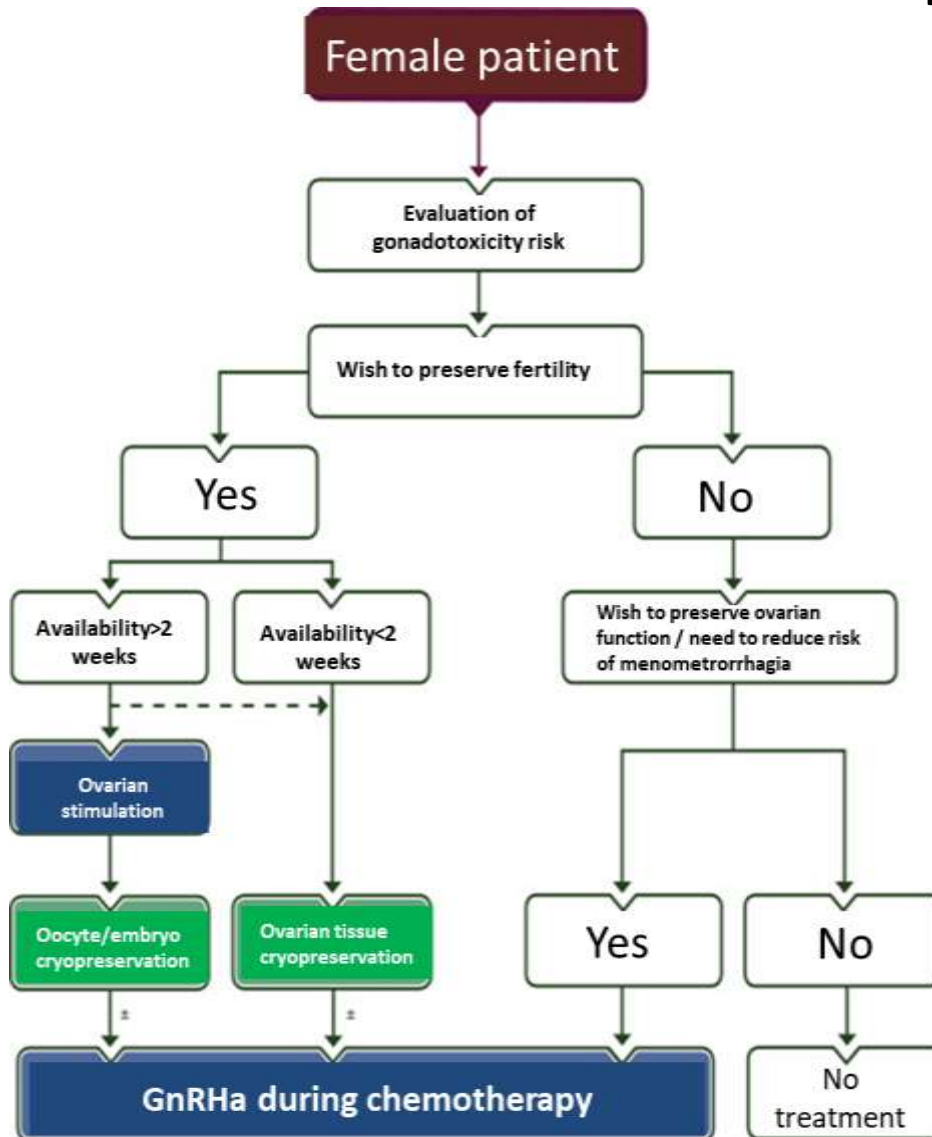
ESMO 2020

FP technique :

- Sperm banking
- Cryopreservation
of spermatogonial stem cells

Fertility Preservation in Females

ESMO Guidelines 2020



- At 20th week of embryogenesis, women reach the maximal number of germ cells in the genital ridges, 7 m. potential oocytes
- Only ~ 400 K oocytes will survive to puberty.
- Ovarian reserve will decrease at 1 K oocytes at the time of menopause
- The preservation of the ovarian reserve is necessary to maintain overall women's health.
- Chemotherapy and radiotherapy result in depletion of the ovarian reserve.

Fertility Preservation in Females

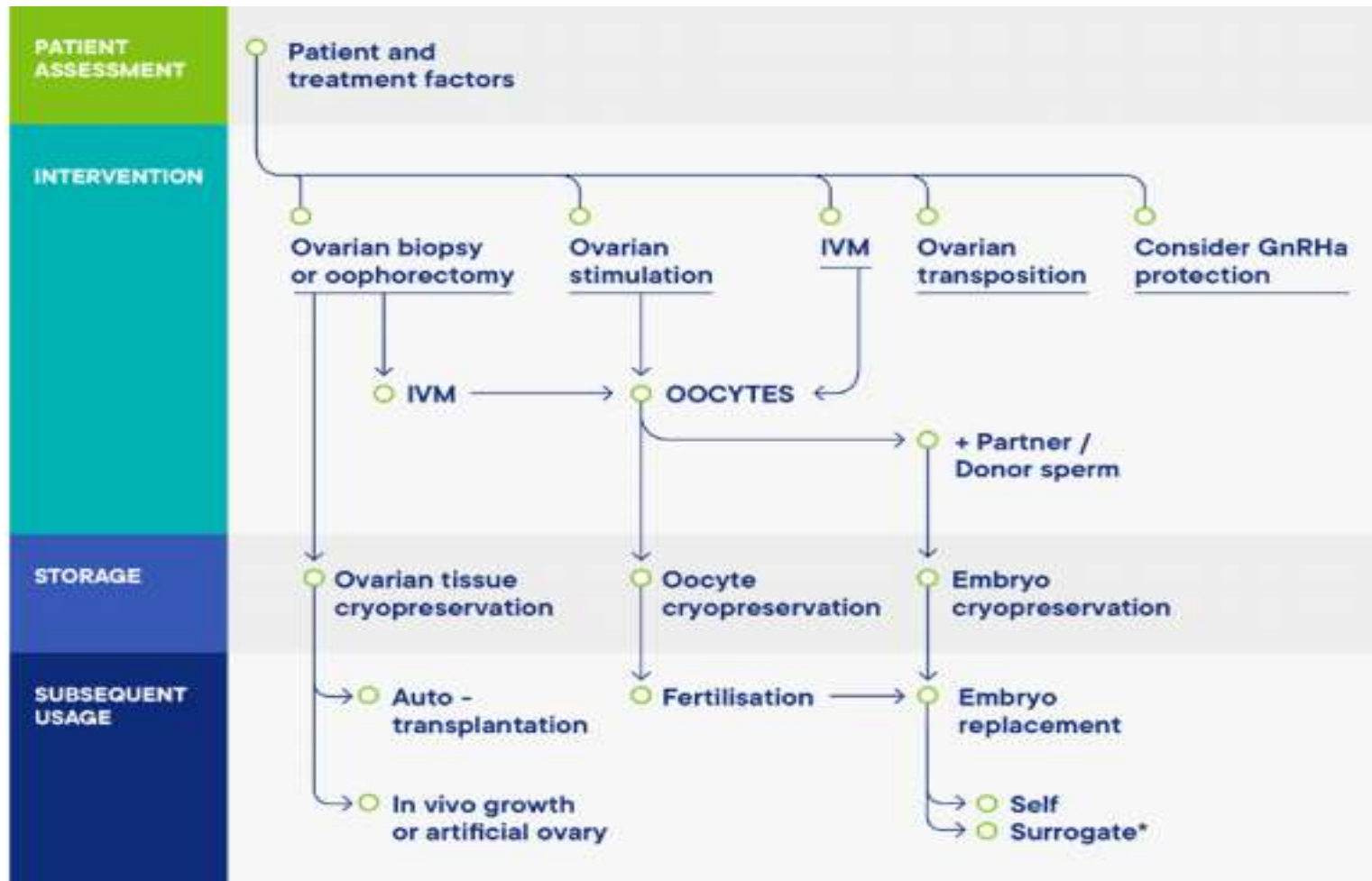
ESMO Guidelines 2020

FP technique :

- Embryo cryopreservation
- Immature/ mature oocyte cryopreservation
- Ovarian tissue cryopreservation (OTC)
- Ovarian transposition

Options for fertility preservation in Females

ESHRE 2020



Limitations

Currently, only 4 to 10% of patients with breast cancer, the most common cancer in reproductive-age women, pursue fertility preservation --- at least partly because of lack of coverage.

Cardoso E, at. Oct 2017



The NEW ENGLAND
JOURNAL of MEDICINE

- Lack of knowledge about risk of infertility in cancer treatments.
 - Lack of discussion about options prior treatment.
 - Most FP methods under experimental investigation
 - More clinical trials needed

Let's get fertility preservation right for everyone!

- FP is available in most but not all European countries; thus specialists should be aware of their national legislative situation.
- FP is possible in individuals undergoing cancer treatment and should be discussed with young patients as soon as they are old enough to understand.
- FP approaches should be considered before treatment. Parents should give consent and support - see the long term quality of their children life
- Patients and survivors would greatly benefit from fertility-related psychological support implemented into standard practice from diagnosis through to survivorship.
- **Fertility experts and reproductive experts should be included in the multidisciplinary oncology team !**
 - **Oncofertility counseling must be offered ASAP at diagnosis !!**

Thessaloniki - Greece



Thank you

