Gynaecological Issues in Breast Cancer Patients
Gynaecologic Issues in Breast Cancer Patients

- **Version 2015:**
  Loibl / Gerber
  (with contribution from Hanf / Kümmel und Stickeler / Scharl)

- **Version 2016:**
  Albert / Bauerfeind / Fersis / Thill
Hormone (Replacement) Therapy (HT) of Estrogen Deficiency after Diagnosis of Breast Cancer

- **Endocrine responsive disease**
  (HT may increase risk)
  
- **Endocrine non-responsive disease**
  (apparently no risk increase)

- **Endocrine responsive disease: combined treatment TAM plus low-dose-HT**

- **Tibolone**

- **Topical vaginal application of**
  - Estriol (E3 0,03 mg)
  - Estradiol (E2) during AI therapy

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**Oxford / AGO LoE / GR**

- **1b B -**
- **2a B +/-**
- **2b B +/-**
- **1b A - -**
- **4 D +/-**
- **4 C -**
Alternative Medical Approaches to Reduce Menopausal Symptoms I

Medical approaches:

- Selective serotonin reuptake inhibitors and serotonin-(noradrenalin) reuptake inhibitors (SSRI-SNRI): reduce hot flashes in BC patients
  - 1st choice: venlafaxine
  - 2nd choice: desvenlafaxine
  - 3rd choice: sertraline, escitalopram

- Gabapentin (BC and TAM-use)

- Pregabalin

- Clonidin (BC and TAM-use)

- MPA (i.m. 500 mg single shot)
  (most potent, but endocrine agent!)

- Vitamine E

- Melatonin (improvement in sleep quality)
CAM - Approaches to Reduce Menopausal Symptoms II

**While anti-cancer treatment: Beware of drug interactions!**

<table>
<thead>
<tr>
<th>CAM Approach</th>
<th>Description</th>
<th>Evidence Level</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy-derived phytoestrogens – isoflavonoids</td>
<td>Hot flush, sleep disturbance, topical vaginal application</td>
<td>1b</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td>Red Clover isoflavonoids</td>
<td>Hot flush, sleep disturbance (might stimulate BC especially in endocrine responsive disease)</td>
<td>1b</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td>Flaxseed-supplementation (40 g/d) (in HR+ ≤ 10 g/d)</td>
<td>Reduces relapses no effect on hot flashes</td>
<td>2b</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td>Black Cohosh for hot flushes</td>
<td>1b</td>
<td>B</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Black cohosh + St. John’s Worth</td>
<td>1b</td>
<td>B</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>St. John’s Wort (in combination-therapy)</td>
<td>Pharmacokinetic interference with endocrine therapy, cytotoxic drugs and tyrosin kinase inhibitors</td>
<td>1b</td>
<td>B</td>
<td>--</td>
</tr>
<tr>
<td>Ginseng root (Panax ginseng or P. quinquefolius)</td>
<td>1b</td>
<td>B</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Bromelain + Papain + Selen + Lektin (for AI induced joint symptoms)</td>
<td>3b</td>
<td>B</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>
General Approaches to Reduce Menopausal Symptoms III

General approaches:

- Physical exercise 1b B ++
- Mind body-medicine (yoga, hypnosis, education, counselling) 1b B +
- Cognitive behavioral therapy (CBT) 1b B ++
- Acupuncture
  - Aromatase-inhibitor treatment induced arthralgia 2b B +
  - Hot flashes 1b B +
  - Depression 2b B +/-
  - Anxiety, Sleep 3b C +/-

(no acupuncture in tumor bearing region, possibility of cell seeding)
Ovarian Protection and Fertility Preservation in Premenopausal Patients Receiving Adjuvant Chemotherapy (CT)

- Ovarian function protection
- CT + GnRHa
  (GnRHa application > 2 weeks prior to chemotherapy)

Impairment of CT – effect cannot be excluded!

- Fertility preservation counselling
- Fertility preservation with assisted reproduction therapy
  (further information www.fertiprotect.de)
### Ovarian Function Preservation – Comparison of Randomized Trials

<table>
<thead>
<tr>
<th></th>
<th><strong>ZORO</strong></th>
<th><strong>PROMISE</strong></th>
<th><strong>Munster et al. - US</strong></th>
<th><strong>POEMS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient number</strong></td>
<td>60 (60 HR-)</td>
<td>281 (50 HR-)</td>
<td>49 (13 HR-) of 124</td>
<td>218 (218 HR-)</td>
</tr>
<tr>
<td><strong>Age median</strong></td>
<td>38 years</td>
<td>39 years</td>
<td>39 years</td>
<td>Premenop. &lt; 50 years</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>goserelin</td>
<td>triptorelin</td>
<td>triptorelin</td>
<td>goserelin</td>
</tr>
<tr>
<td><strong>Start of treatment</strong></td>
<td>&gt;2 weeks prior to cht</td>
<td>&gt;1 week prior to cht</td>
<td>&gt; 1 week prior to cht</td>
<td>&gt; 1 week prior to cht</td>
</tr>
<tr>
<td><strong>Primary Endpoint</strong></td>
<td>menstruation at month 6 after chemotherapy</td>
<td>rate of early menopause at month 12 after chemotherapy</td>
<td>menstruation rate within 2 years after cht</td>
<td>Ovarian failure at 2 yrs after cht</td>
</tr>
<tr>
<td><strong>Primary objective</strong></td>
<td>to detect 30% absolute increase of menstruation rate</td>
<td>to detect at least 20% absolute reduction in early menopause</td>
<td>to detect 20% difference in amenorrhea rate - from 10% to 30%</td>
<td>Treatment as only Independent predictive factor</td>
</tr>
<tr>
<td><strong>Multivar. analysis</strong></td>
<td>age as only independent predictive factor</td>
<td>treatment as only independent predictive factor</td>
<td>n.d.</td>
<td></td>
</tr>
<tr>
<td><strong>Resumption of menses at month 12 in HR- cohort</strong></td>
<td>83% with LHRH vs. 80% w/o</td>
<td>93% with LHRHa vs. 74% w/o</td>
<td>74% with LHRH vs. 68% w/o</td>
<td>78% with LHRH vs. 75% w/o; at 2 years; 22% with LHRH vs. 8%</td>
</tr>
<tr>
<td><strong>Median time to restoration of menses (months)</strong></td>
<td>6.1 with LHRHa vs. 6.8 w/o; p=0.30</td>
<td>not reached with LHRH vs. 6.7 w/o; p=0.07</td>
<td>5.8 with LHRH vs. 5.0 w/o; p=0.58</td>
<td>n.d.</td>
</tr>
<tr>
<td><strong>Cyclophosph. dose</strong></td>
<td>4600 vs. 4700mg</td>
<td>4080 vs. 4008 mg</td>
<td>n.r.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
## Metaanalysis of GnRHa for Prevention of Premature Ovarian Failure

<table>
<thead>
<tr>
<th>Author (year of publication)</th>
<th>Odds Ratio</th>
<th>95%CI</th>
<th>Treated Events</th>
<th>Controls Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Li M (2008)</td>
<td>0.31</td>
<td>0.11-0.89</td>
<td>8/31</td>
<td>17/32</td>
</tr>
<tr>
<td>Badaway (2009)</td>
<td>0.06</td>
<td>0.02-0.20</td>
<td>4/39</td>
<td>26/39</td>
</tr>
<tr>
<td>Sverrisdottir 1 (2009)</td>
<td>0.19</td>
<td>0.04-1.06</td>
<td>14/22</td>
<td>18/20</td>
</tr>
<tr>
<td>Sverrisdottr 2 (2009)</td>
<td>2.03</td>
<td>0.31-13.27</td>
<td>27/29</td>
<td>20/23</td>
</tr>
<tr>
<td>Del Mastro (2011)</td>
<td>0.27</td>
<td>0.14-0.54</td>
<td>13/148</td>
<td>35/133</td>
</tr>
<tr>
<td>Gerber (2011)</td>
<td>0.56</td>
<td>0.19-1.62</td>
<td>9/30</td>
<td>13/30</td>
</tr>
<tr>
<td>Sun (2011)</td>
<td>0.38</td>
<td>0.06-2.30</td>
<td>3/11</td>
<td>5/10</td>
</tr>
<tr>
<td>Munster (2012)</td>
<td>1.09</td>
<td>0.22-5.52</td>
<td>4/26</td>
<td>3/21</td>
</tr>
<tr>
<td>Elgindy 1 (2013)</td>
<td>0.76</td>
<td>0.18-3.25</td>
<td>4/25</td>
<td>5/25</td>
</tr>
<tr>
<td>Elgindy 2 (2013)</td>
<td>1.00</td>
<td>0.25-4.00</td>
<td>5/25</td>
<td>5/25</td>
</tr>
<tr>
<td>Song (2013)</td>
<td>0.50</td>
<td>0.25-1.03</td>
<td>15/89</td>
<td>27/94</td>
</tr>
<tr>
<td>Karimi-zarchi (2014)</td>
<td>0.05</td>
<td>0.01-0.29</td>
<td>2/21</td>
<td>14/21</td>
</tr>
<tr>
<td>Li JW (2014)</td>
<td>0.44</td>
<td>0.04-4.35</td>
<td>1/54</td>
<td>3/73</td>
</tr>
<tr>
<td>Moore (2015)</td>
<td>0.30</td>
<td>0.10-0.87</td>
<td>5/66</td>
<td>15/69</td>
</tr>
<tr>
<td><strong>Summary: Fixed effect</strong></td>
<td><strong>0.34</strong></td>
<td><strong>0.25-0.46</strong></td>
<td><strong>114/616</strong></td>
<td><strong>206/615</strong></td>
</tr>
<tr>
<td><strong>Summary: Random effect</strong></td>
<td><strong>0.36</strong></td>
<td><strong>0.23-0.57</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary:** The meta-analysis of GnRHa for prevention of premature ovarian failure shows a significant reduction in the risk of premature ovarian failure in breast cancer patients treated with GnRHa compared to controls. The odds ratio ranges from 0.05 to 2.03, with the majority of studies reporting a reduction in the risk of premature ovarian failure.

Testing Ovarian Reserve

Assessment of ovarian reserve in infertile patients (>6-12 mths without conception)*

Tests for fertility assessment

- Anti-Müllerian Factor
- Antral follicle count

* Tests are suggested for women > 35 yrs and infertility for 6-12 months; the tests do not predict failure to conceive, but they allow to counsel that the window of opportunity to conceive may be shorter than anticipated and infertility treatment may be considered.
Assessment of Ovarian Reserve

Tests recommended to assess ovarian reserve (according to ACOG Committee Opinion No. 618: Ovarian Reserve Testing. Obstetrics & Gynecology 2015;125:268–273)

<table>
<thead>
<tr>
<th>Test</th>
<th>Details</th>
</tr>
</thead>
</table>
| FSH (follicle stimulating hormone) plus estradiol    | • Serum level on cycle day 2–3  
• Variation between cycles possible  
• High FSH value is associated with poor response to ovarian stimulation |
| Anti Müllerian Hormone (AMH)                        | • No specific timing for the test  
• Stable value within and between menstrual cycles  
• Low AMH value is associated with poor response to ovarian stimulation |
| Antral follicle count (AFC)                         | • Number of visible follicles (2–10 mm) during transvaginal ultrasound  
• Performed on cycle days 2–5  
• Number of antral follicles correlates with ovarian response to stimulation |

All the tests do not predict failure to conceive, but they allow to counsel that the window of opportunity to conceive may be shorter than anticipated.
Contraceptive Options for Women after Diagnosis of Breast Cancer

<table>
<thead>
<tr>
<th>Option</th>
<th>Oxford / AGO LoE / GR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrier methods</td>
<td>5 D +</td>
</tr>
<tr>
<td>Sterilization (tubal ligation / vasectomy)</td>
<td>5 D +</td>
</tr>
<tr>
<td>Non-hormonal intrauterine devices (IUDs)</td>
<td>3b D +</td>
</tr>
<tr>
<td>Levonorgestrel-releasing IUDs</td>
<td>2b C -</td>
</tr>
<tr>
<td>Removal in newly diagnosed patients</td>
<td>4 D +/-</td>
</tr>
<tr>
<td>Timing methods</td>
<td>5 D -</td>
</tr>
<tr>
<td>Injectable progestin-only contraceptives</td>
<td>5 D -</td>
</tr>
<tr>
<td>Progestin-only oral contraceptives</td>
<td>5 D -</td>
</tr>
<tr>
<td>Combined oral contraceptives</td>
<td>5 D -</td>
</tr>
</tbody>
</table>

- LoE: Level of Evidence
- GR: Grade of Recommendation
Emergency Contraception after Diagnosis of Breast Cancer

- Copper intrauterine device (Cu-IUD) 5 D +
- Levonorgestrel, Ulipristal 5 D +
## Sexual Health

<table>
<thead>
<tr>
<th>Oxford / AGO LoE / GR</th>
<th>Assessment of factors to sexual dysfunction</th>
<th>5</th>
<th>C</th>
<th>+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use of patient-reported questionnaires</td>
<td>4</td>
<td>C</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Vaginal dryness:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-hormonal lubricants / moisturizers</td>
<td>1b</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Psychoeducational support, group therapy,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sexual counseling, marital counseling,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>psychotherapy</td>
<td>1b</td>
<td>B</td>
<td>+</td>
</tr>
</tbody>
</table>
Assessment of Sexual Health

- **Sexual Complaints Screener (SCS) for women**
  German Translation

**Screening-Check-Fragebogen: Overall Sexual Function**

1. Are you satisfied with your sexual function?
   - yes, no; if no
2. How long have you been dissatisfied with your sexual function?
3. The problem(s) with your sexual function is: (mark one or more):
   1. Problem with little or no interest in sex
   2. Problem with decreased genital sensation (feeling)
   3. Problem with decreased vaginal lubrication (dryness)
   4. Problem reaching orgasm
   5. Problem with pain during sex
   6. Other
4. Which problem is most bothersome? (circle) 1, 2, 3, 4, 5, 6.
5. Would you like to talk about it with your doctor?

Gynecological Issues in Breast Cancer Patients (2/15)

Further information:

Screened data bases:
- Pubmed 2009 –2015
- ASCO 2009 - 2015
- Cochrane 2009 - 2015
- Medline 2009 - 2015

Screened: Metaanalyses/ Systematic reviews / RCT / Cohort studies

No references
**Hormonal (Replacement) Therapy of Estrogen Deficiency after Diagnosis of Breast Cancer (3/15)**

No further information

**References:**

- Endocrine responsive disease
  (HT may increase risk)
- Endocrine non-responsive disease
  (apparently no risk increase)
- Endocrine responsive disease: combined treatment TAM plus low-dose-HT


- Tibolone:

   Kenemans P. Effects of Tibolone on climacteric symptoms and quality of life in breast cancer patients—Data from
3. Bundred NJ: Tibolone increases bone mineral density but also relapse in breast cancer survivors: LIBERATE trial

➢ Topical Vaginal Application:

Genitourinary syndrome of menopause (GSM) is defined as a collection of symptoms and signs associated with a
decrease in estrogen and other sex steroids involving changes to the labia majora/minora, clitoris, vestibule/introitus,
vagina, urethra and bladder (Portman DJ, 2014). For urogenital problems vaginal moisturizers, isoflavone or topical
estrogens can be used (Ghazanfarpour M, 2015; Loibl S, 2011).

2. Kendall A, Dowssett M, Folkerd E, Smith I. Caution: vaginal estradiol appears to be contraindicated in
3. Ponzone R, Biglia N, Jacomuzzi ME, Maggiorotto F, Mariani L, Sismondi P. Vaginal oestrogen therapy after breast
   or decreased libido in women with early stage breast cancer treated with aromatase inhibitors. Cancer Res 2009;69
   [Abstract nr 5038].
6. Le Ray I., Dell’Aniello S., Bonnetain F., Azoulay L., Suissa S. Local estrogen therapy and risk of breast cancer
   609.
   of menopause: new terminology for vulvovaginal atrophy from the International Society for the Study of Women's


Alternative Medical Approaches to Reduce Menopausal Symptoms I (4/15)

Further information:

Menopausal symptoms are bothersome for breast cancer survivors and affect quality of life. Since hormonal replacement therapy should be avoided in ER positive breast cancer patients alternatives are important. In breast cancer patients treated with tamoxifen and menopausal symptoms the use of venlafaxine, citalopram, clonidine, gabapentin and pregabalin is considered effective in treating hot flashes.(Haque R,2015) The use of paroxetine and fluoxetine should be avoided because the may reduce the efficacy of tamoxifen. Increased breast cancer mortality is associated with the use of paroxetine and tamoxifen (Chubak J, 2016; Kelly 20 CM, 2010).

Patients not being treated with tamoxifen the use of venlafaxine, paroxetine, citalopram, clonidine, gabapentin and pregabalin be considered effective in treating hot flashes. Breast cancer survivors prefer venlafaxine over gabapentin for treating hot flashes.( Bordeleau L, 2010)

Sertraline, phytoestrogens, black cohosh and St. John's wort should not be used to treat hot flashes.( L'Espérance S, 2013; Kontos M, 2010)

References:


SSRI:

Venlafaxine


Desvenlafaxine


Paroxetine


Fluoxetine


Citalopram


Gabapentin


Pregabalin

Clonidin

(D) MPA (depo-) (Medroxyprogesterone acetate)


**Vitamine E**


**Melatonin**

Further information and references:

The majority of studies, regarding the efficacy of herbal treatments for menopausal symptoms – mostly hot flushes – have not been conducted in women with breast cancer and many are of short duration. (Roberts H, 2010) A recent systematic review retrieved 8 RCTs involving 798 breast cancer patients. Traditional herbal medicine combined with conventional therapy in the treatment of breast cancer has been efficacious in improving QOL and in decreasing the number of hot flashes per day (Kim W 2015). Increased pharmacovigilance practices for herbal medicines are required with initiatives to stimulate reporting of suspected adverse reactions. Red clover users were less likely to report weight gain, night sweats, and difficulty concentrating. (Ma H, 2011)


Soy- and red clover derived isoflavonoids are potent phytoestrogens, which can interact with estrogen receptors, and their dose-response relationships with estrogen receptors in vitro are complicated. Interaction may have breast cancer protecting and / or promoting effects.

**Soy- derived isoflavonoids**
Five RCTs reported on the efficacy of soy for hot flashes, showing no significant reductions in hot flashes compared to placebo.

There is lack of evidence showing harm from use of soy with respect to risk of breast cancer or recurrence, based on long term observational data. Soy intake consistent with that of a traditional Japanese diet (2-3 servings daily, containing 25-50mg isoflavones) may be protective against breast cancer and recurrence. Human trials show that soy does not increase circulating estradiol or affect estrogen-responsive target tissues. Prospective data of soy use in women taking tamoxifen
does not indicate increased risk of recurrence. While there is no clear evidence of harm, better evidence confirming safety is required before use of high dose (≥100mg) isoflavones can be recommended for breast cancer patients (Fritz H, 2013).

**Topical administration of soy-derived isoflavonoids**
Topical isoflavones showed beneficial effects on dyspareunia, vaginal dryness and maturation value. Isoflavone vaginal gel was similar to the use of conjugated equine oestrogen cream (0.3 mg/day) was and superior to that of placebo gel (Ghazanfarpour M., 2015).

**Red clover-derived isoflavonoids**
The systematic review and meta-analysis of 11 RCTs showed that red clover had a positive effect on alleviating hot flash in menopausal women. Slight changes were found in FSH, LH, testosterone, and SHBG and more important a significant effect in estrogen status by red clover consumption. Red clover may increase the risk of estrogen-dependent cancers as estradiol showed a borderline increase in the red clover groups in comparison with control group based on three trials (Ghazanfarpour M., 2015).


**Flaxseed** has no effect on reducing hot flashes based on randomized phase III trial where it failed to demonstrate a significant reduction of hot flushes for postmenopausal patients taking additional 410 g of lignans as compared to placebo (Pruthi S, 2012).


Taken together neither **Black cohosh** (Cimicifuga racemosa) (Leach MJ, 2012) nor **St John’s Wort** (Caraci F, 2011) nor **Ginseng root** (Kim MS. 2013) showed a benefit regarding improvement of menopausal symptoms.


In a Phase III trial the fixed combination of Red Clover and St. Johns Wort were significantly better in reducing menopausal symptoms than placebo.

A combination of sodium selenite, proteolytic plant enzymes (bromelaine and papain), and Lens culinaris lectin as a complementary treatment was effective in reducing hormonal treatment related athralgia and mucosal dryness. (Uhlenbrock B, 2010) But there were no reduction in other menopausal symptoms.

General Approaches to Reduce Menopausal Symptoms III (6/15)

Further information:

Physical exercises (PE) and cognitive behavior therapy (CBT; this is one form of psychotherapy) have positive effects on menopausal symptoms and, to a lesser degree, on sexuality and physical functioning of patients with breast cancer experiencing treatment-induced menopause. (Duijts SF, 2012; Pachman DR, 2010; Mann E, 2012). The CBT and PE are cost-effective. Prescription is recommended by the authors (Mewes JC, 2015).

Mind-Body-Medicine (MBM; Relaxation training, Yoga, Hypnosis) resulted in a moderate up to a significant improvement in hot flashes score, joint pain, fatigue, sleep, mood, and relaxation. (Buffart LM, 2012; Cramer H, 2014). However, these effects are seen even after a longer period of application and avoid after some months stopping MBM. Acupuncture can also be used but the results from RCT are conflicting. A meta-analysis showed significant effects of acupuncture compared with sham acupuncture, but marked heterogeneity was observed in this model. (Lee MS, 2009)

References:

Further information:

Chemotherapy carries a risk of permanent ovarian failure. Ovarian protection is therefore discussed in patients who want to preserve fertility.

Fertility preservation counselling is suggested in all patients who want to preserve their fertility.

References:

Ovarian function protection CT+GNRH


during chemotherapy to reduce ovarian failure in early stage, hormone receptor-negative breast cancer: an international Intergroup trial of SWOG, IBCSG, ECOG, and CALGB (Alliance). J Clin Oncol 2014; ASCO abstract


Fertility preservation counselling


Fertility Preservation


Randomised Controlled Trials and Metaanalysis


Ovarian Function Preservation Comparison of Randomized Trials (8/15)

Further information

This overview compares the different randomised trials comparing fertility preservation with GnRHa analogue without GnRHa analogue.

The ovarian failure rate at 2 years was statistically significant reduced from 22% without to 8% with GnRH treatment. Reassuringly the disease-free survival was not compromised by GnRH, in the contrary, the GnRH-group had a statistically significant improved DFS and (HR 0.49, p= 0.04) as well as OFS (HR 0.43; p= 0.05).

The number of pregnancies (22 vs. 12) and babies born (18 vs. 12) was also improved by goserelin.

The study by Munster et al. has not finished recruitment. Only 49 out of 124 planned pts were randomised. However, the results are in concordance with the ZORO study. Supporting the fact that the observed effect of LHRH is at its best small.

References


A recent meta-analysis of 12 randomized controlled trials investigated whether the use of LHRHa during chemotherapy in premenopausal breast cancer patients reduces treatment-related premature ovarian failure (POF) rate, increases pregnancy rate, and disease-free survival (DFS: median follow-up 4.1 years). Results were: „The use of LHRHa was associated with a significant reduced risk of premature ovarian failure (OR 0.36, 95% CI 0.23–0.57; P < 0.001), yet with significant heterogeneity (I² = 47.1%, Pheterogeneity = 0.026). In eight studies reporting amenorrhea rates 1 year after chemotherapy completion, the addition of LHRHa reduced the risk of POF (OR 0.55, 95% CI 0.41–0.73, P < 0.001) without heterogeneity (I² = 0.0%, Pheterogeneity = 0.936). In five studies reporting pregnancies, more patients treated with LHRHa achieved pregnancy (33 versus 19 women; OR 1.83, 95% CI 1.02–3.28, P = 0.041; I² = 0.0%, Pheterogeneity = 0.629). In three studies reporting DFS, no difference was observed (HR 1.00, 95% CI 0.49–2.04, P = 0.939; I² = 68.0%, Pheterogeneity = 0.044)“. The authors concluded: „Temporary ovarian suppression with LHRHa in young breast cancer patients is associated with a reduced risk of chemotherapy-induced premature ovarian failure and seems to increase the pregnancy rate, without an apparent negative consequence on prognosis.“ (Lampartini M et al. 2015)

Reference:

Further information:

The menstruation history is reliable only in women < 45 years of age. A more precise evaluation, especially in perimenopausal patients is possible with the measurement of FSH and E2 levels in peripheral blood. Hormonal replacement should be stopped at least 6 weeks before measurement. In perimenopausal women undergoing treatment for breast cancer, it can be difficult to determine true menopausal status because adjuvant chemotherapy, tamoxifen, and gonadotropin-releasing hormone analogues can induce transient (or permanent) ovarian suppression [1,2]. Low AMH (antimuellerian hormone) levels seem to be indicative for reduced ovarian reserve and chemotherapy-related amenorrhea (CRA) in chemotherapy-treated breast cancer patients [3, 4,5,6].

Antral follicle count, defined as the sum of follicle diameters of all follicles of 10mm in both ovaries. [7]

References:

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Assessment of Ovarian Reserve (11/15)

No further information

Reference:
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Contraceptive Options for Women after Diagnosis of Breast Cancer (12/15)

No further information

References:

Emergency Contraception after diagnosis of breast cancer (13/15)

No further information

References:

Sexual Health (14/15)

No further information

References:

1. Runowicz CD1, Leach CR2, Henry NL1, Henry KS1, Mackey HT1, Cowens-Alvarado RL1, Cannady RS1, Pratt-Chapman ML1, Edge SB1, Jacobs LA1, Hurria A1, Marks LB1, LaMonte SJ1, Warner E1, Lyman GH1, Ganz PA1. American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline. J Clin Oncol. 2015 Dec 7. pii: JCO.2015.64.3809

Assessment of Sexual Health (15/15)

Further information:

Sexual Complaints Screener (SCS) for women
German Translation

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