

Diagnostik und Therapie primärer und metastasierter Mammakarzinome

Endokrine und zielgerichtete Therapie des metastasierten Mammakarzinoms

Endokrine Therapie des metastasierten Mammakarzinoms

- **Versionen 2002–2017:**

Albert / Bischoff / Dall / Fersis / Friedrich / Gerber /
Hooper / Janni / Jonat / Kaufmann / Liedtke / Loibl /
Lück / von Minckwitz / Möbus / Müller / Mundhenke /
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- **Version 2018:**

Lück / Loibl

Endokrine Therapie des metastasierten Mammakarzinoms

Indikation

Oxford LoE: 1a

GR: A

AGO: ++

Die endokrin-basierte Therapie ist die erste Therapieoption in der Behandlung des metastasierten hormonrezeptor-positiven (oder -unbekannten) Mammakarzinoms

- **Ausnahme: akute lebensbedrohliche Erkrankung**
- **Cave: Der HR-Status kann sich im Laufe der Erkrankung verändern. Falls möglich, sollte eine Histologie der neuen Metastase gewonnen werden**

1. Wilcken N, Hornbuckle J, Gherzi D. Chemotherapy alone versus endocrine therapy alone for metastatic breast cancer. Cochrane Database Syst Rev. 2003;(2):CD002747.
2. Gibson L, Lawrence D, Dawson C, et al. Aromatase inhibitors for treatment of advanced breast cancer in postmenopausal women. Cochrane Database Syst Rev. 2009 ;(4):CD003370. doi: 10.1002/14651858.CD003370.pub3.
3. Lee CI, Goodwin A, Wilcken N. Fulvestrant for hormone-sensitive metastatic breast cancer. Cochrane Database Syst Rev. 2017;1:CD011093. doi:10.1002/14651858.CD011093.pub2.
4. Cardoso F, et al. 3rd ESO-ESMO international consensus guidelines for Advanced Breast Cancer (ABC 3). Breast 2017;31:244-259.

Vergleich ER/PR und HER2 Metastase vs. Primärtumor

Metaanalyse basierend auf 48 (überwiegend retrospektiven) Analysen:

Gepoolte relative Diskordanz

- 20% (95%CI 16-35%) für ER
- 33% (95%CI 29-38%) für PR
- 8% (95% CI 6-10%) für HER2

Wechsel der Rezeptorexpression von positiv zu negativ und von negativ zu positiv

- 4% and 14% für ER
- 46% and 15% für PR
- 13% and 5% für HER2

1. Amir E, Miller N, et al. Prospective study evaluating the impact of tissue confirmation of metastatic disease in patients with breast cancer. J Clin Oncol 2012; 30(6):587-92.
2. Amir E, et al. Tissue confirmation of disease recurrence in breast cancer patients: pooled analysis of multi-centre, multi-disciplinary prospective studies. Cancer Treat Rev. 2012 Oct;38(6):708-14.
3. Chan A, Morey A, Brown B, et al. A retrospective study investigating the rate of HER2 discordance between primary breast carcinoma and locoregional or metastatic disease. BMC Cancer. 2012;12:555.
4. Lindström LS, Karlsson E et al. Clinically used breast cancer markers such as estrogen receptor, progesterone receptor, and human epidermal growth factor receptor 2 are unstable throughout tumor progression. J Clin Oncol ;30:2601-8, 2012.
5. Lower EE, Glass EL, Bradley DA, et al. Impact of metastatic estrogen receptor and progesterone receptor status on survival. Breast Cancer Res Treat. 2005;90(1):65-70.
6. Macfarlane R, Seal M, Speers C, et al. Molecular alterations between the primary breast cancer and the subsequent locoregional/metastatic tumor. Oncologist. 2012;17(2):172-8.
7. Niikura N, Liu J, et al. Loss of human epidermal growth factor receptor 2 (HER2) expression in metastatic sites of HER2-overexpressing primary breast tumors. J Clin Oncol;30(6):593-9, 2012.
8. Thompson AM, Jordan LB, Quinlan P, et al; Breast Recurrence in Tissues Study Group. Prospective comparison of switches in biomarker status between primary and

recurrent breast cancer: the Breast Recurrence In Tissues Study (BRITS). *Breast Cancer Res.* 2010;12(6):R92

9. Sighoko D, Liu J, Hou N, et al. Discordance in hormone receptor status among primary, metastatic, and second primary breast cancers: biological difference or misclassification? *Oncologist.* 2014;19(6):592-601.
10. Curtit E, et al. Discordances in estrogen receptor status, progesterone receptor status, and HER2 status between primary breast cancer and metastasis. *Oncologist.* 2013 Jun;18(6):667-74.
11. Niikura N et al. Loss of human epidermal growth factor receptor 2 (HER2) expression in metastatic sites of HER2-overexpressing primary breast tumors. *J Clin Oncol.* 2012;30(6):593-9.

Endokrine Therapie

Allgemeine Überlegungen

- **Therapieentscheidungen aller Behandlungslinien sollten die Vortherapien, Alter und Komorbiditäten sowie den jeweiligen Zulassungsstatus berücksichtigen.**
- **Eine prämenopausale Patientin unter GnRH-A-Therapie kann analog zur postmenopausalen Patientin behandelt werden.**

1. Partridge AH, et al. Chemotherapy and targeted therapy for women with human epidermal growth factor receptor 2-negative (or unknown) advanced breast cancer: American Society of Clinical Oncology Clinical Practice Guideline. J Clin Oncol. 2014;32(29):3307-29.
2. Rugo HS, et al. Endocrine Therapy for Hormone Receptor-Positive Metastatic Breast Cancer: American Society of Clinical Oncology Guideline. J Clin Oncol 2016;34(25):3069-103.

Endokrine Therapie der prämenopausalen Patientin mit HER2-negativem metastasiertem Mammakarzinom

- GnRH-A + Fulvestrant + Palbociclib
- GnRH-A + AI + Palbociclib*
- GnRH-A + AI/Tamoxifen + Ribociclib
- GnRH-A + Fulvestrant + Abemaciclib
- GnRH-A + Tamoxifen (vs. OFS od. Tam)
- Unterdrückung der Ovarialfunktion (OFS)
- Tamoxifen
- GnRH-A + AI (first + second line)
- GnRH-A + Fulvestrant
- Aromataseinhibitoren ohne OFS

Oxford		
LoE	GR	AGO
2b	B	++
5	D	++
1b ^a	B	++
2b	B	+
1a	A	++
2b	B	+
2b	B	+
2b	B	+
1b	B	+
3	D	--

* Extrapoliert aus Daten postmenopausaler Patientinnen (mit AI)

GnRHa plus fulvestrant plus palbociclib

1. Turner N et al. Palbociclib in Hormone-Receptor-Positive Advanced Breast Cancer. N Engl J Med 2015; 373:209-219
2. Loibl S, et al. Palbociclib Combined with Fulvestrant in Premenopausal Women with Advanced Breast Cancer and Prior Progression on Endocrine Therapy: PALOMA-3 Results. Oncologist. 2017;22(9):1028-1038.

GnRHa plus AI/Tamoxifen plus ribociclib

Tripathy D et al. First-line ribociclib vs placebo with goserelin and tamoxifen or a non-steroidal aromatase inhibitor in premenopausal women with hormone receptor-positive, HER2-negative advanced breast cancer: Results from the randomized phase III MONALEESA-7 trial. SABCS 2017, GS-2

GnRHa plus tamoxifen (vs. OFS or tam)

1. Klijn JG, Blamey RW, Boccardo F, et al. Combined tamoxifen and luteinizing hormone-releasing hormone (LHRH) agonist versus LHRH agonist alone in premenopausal advanced breast cancer: a meta-analysis of four randomized trials. J Clin Oncol. 2001;19(2):343-53.
2. Rugo HS, et al. Endocrine Therapy for Hormone Receptor-Positive Metastatic Breast Cancer: American Society of Clinical Oncology Guideline. J Clin Oncol. 2016 ;34(25):3069-103.

Ovarian function suppression (OFS), tamoxifen

1. Taylor CW, Green S, Dalton WS, et al: Multicenter randomized clinical trial of goserelin versus surgical ovariectomy in premenopausal patients with receptor-positive metastatic breast cancer: an intergroup study. *J Clin Oncol* 1998;16:994-999.
2. Osborne CK: Tamoxifen in the treatment of breast cancer. *N Engl J Med* 1998;339
3. Crump M, Sawka CA, DeBoer G, et al: An individual patient-based meta-analysis of tamoxifen versus ovarian ablation as first line endocrine therapy for premenopausal women with metastatic breast cancer. *Breast Cancer Res Treat* 1997;44:201-210.

GnRHa plus AI (first or second line)

1. Forward DP, Cheung KL, Jackson L, et al. Clinical and endocrine data for goserelin plus anastrozole as second-line endocrine therapy for premenopausal advanced breast cancer. *Br J Cancer*. 2004 ;90(3):590-4.
2. Park IH, Ro J, Lee KS, et al. Phase II parallel group study showing comparable efficacy between premenopausal metastatic breast cancer patients treated with letrozole plus goserelin and postmenopausal patients treated with letrozole alone as first-line hormone therapy. *J Clin Oncol*. 2010;28(16):2705-11.
3. Carlson RW, et al. Phase II trial of anastrozole plus goserelin in the treatment of hormone receptor-positive, metastatic carcinoma of the breast in premenopausal women. *J Clin Oncol*. 2010;28(25):3917-21.

GnRHa plus fulvestrant

1. Bartsch R, Bago-Horvath Z, et al. Ovarian function suppression and fulvestrant as endocrine therapy in premenopausal women with metastatic breast cancer. *European Journal of Cancer* 48: 1932–1938, 2012.
2. Turner M et al. Palbociclib in Hormone-Receptor–Positive Advanced Breast Cancer. *N Engl J Med* 2015; 373:209-219
3. Loibl S, et al. Palbociclib Combined with Fulvestrant in Premenopausal Women with Advanced Breast Cancer and Prior Progression on Endocrine Therapy: PALOMA-3 Results. *Oncologist*. 2017;22(9):1028-1038.

Endokrine Therapie der postmenopausalen Patientin mit HER2-negativem metastasiertem Mammakarzinom

- Fulvestrant 500 mg
- Aromataseinhibitor (dritte Generation)*
- Tamoxifen
- Fulvestrant 250 mg + Anastrozol
- Frühere Behandlungslinien wiederholen

Oxford		
LoE	GR	AGO
1b	B	++
1a	A	++
1a	A	+
1b	B	+/-
5	D	+/-

* Keine Hinweise für die Überlegenheit eines einzelnen Aromataseinhibitors.
Um eine spätere Therapie nach Zulassungsstatus mit Everolimus zu ermöglichen,
sollte in der Erstlinientherapie bevorzugt ein nicht-steroidaler AI eingesetzt werden.

Fulvestrant 500 mg (vs. anastrozole)

1. Ellis MJ, et al. Fulvestrant 500 mg Versus Anastrozole 1 mg for the First-Line Treatment of Advanced Breast Cancer: Overall Survival Analysis From the Phase II FIRST Study. J Clin Oncol. 2015;33(32):3781-7
2. Robertson JF, et al. Fulvestrant 500 mg versus anastrozole 1 mg for hormone receptor-positive advanced breast cancer (FALCON): an international, randomised, double-blind, phase 3 trial. Lancet. 2016 ;388(10063):2997-3005.

Fulvestrant 500 mg >> 250 mg

1. Di Leo A, et al. Final overall survival: fulvestrant 500 mg vs 250 mg in the randomized CONFIRM trial. J Natl Cancer Inst. 2014;106(1):djt337.

Aromatase inhibitors (3rd generation)*

1. Bonnetterre J, et al: Anastrozole versus Tamoxifen as First-Line Therapy for Advanced Breast Cancer in 668 Postmenopausal Women: Results of the Tamoxifen or Arimidex Randomized Group Efficacy and tolerability Study. J Clin Oncol 2000;18:3748-3757
2. Thürlimann B, et al: Anastrozole (Arimidex) versus tamoxifen as first-line therapy in postmenopausal women with advanced breast cancer: results of the double-blind cross-over SAKK trial 21/95 – a substudy of the TARGET (Tamoxifen or Arimidex Randomized Group Efficacy and Tolerability) trial. Breast Cancer Res Treat 2004;85:247-254

Aromatase inhibitors (3rd generation) (>non-AI)

1. Bonnetterre, J, et al. Anastrozole is superior to tamoxifen as first-line therapy in hormone receptor positive advanced breast carcinoma Cancer 2001 92
2. Mouridsen, H, et al, Phase III study of letrozole versus tamoxifen as first-line therapy of advanced breast cancer in postmenopausal women: analysis of survival and update of efficacy from the International Letrozole Breast Cancer Group Journal of Clinical Oncology. J Clin Oncol. 2003;21(11):2101-9.
3. Paridaens R, et al; European Organization for the Research and Treatment of Cancer (EORTC)- Investigational Drug Branch for Breast Cancer (IDBBC). Mature results of a randomized phase II multicenter study of exemestane versus tamoxifen as first-line hormone therapy for postmenopausal women with metastatic breast cancer. Ann Oncol. 2003 Sep;14(9):1391-8.
4. Gibson L, Lawrence D, Dawson C, et al. Aromatase inhibitors for treatment of advanced breast cancer in postmenopausal women. Cochrane Database Syst Rev. 2009;(4):CD003370.
5. Xu HB, Liu YJ, Li L. Aromatase inhibitor versus tamoxifen in postmenopausal woman with advanced breast cancer: a literature-based meta-analysis. Clin Breast Cancer. 2011;11(4):246-51.
6. Rugo HS, et al. Endocrine Therapy for Hormone Receptor-Positive Metastatic Breast Cancer: American Society of Clinical Oncology Guideline. J Clin Oncol. 2016 ;34(25):3069-103.
7. Sini V, et al. Endocrine therapy in post-menopausal women with metastatic breast cancer: From literature and guidelines to clinical practice. Crit Rev Oncol Hematol. 2016;100:57-68.

Endokrin-basierte Therapie der postmenopausalen Patientin mit HER2-negativem metastasiertem Mammakarzinom

- **Letrozol* + Palbociclib**
- **Fulvestrant + Palbociclib**
- **Letrozol* + Ribociclib**
- **Letrozol /Anastrozol+ Abemaciclib**
- **Fulvestrant + Abemaciclib**
- **Abemaciclib Monotherapie**
- **Exemestan + Everolimus**
- **Tamoxifen + Everolimus**
- **Letrozol + Everolimus**
- **Fulvestrant + Everolimus**
- **CDK4/6i beyond progression**

Oxford		
LoE	GR	AGO
1b	B	++
1b	B	++
1b	B	++
1b	B	+
1b	B	+
3	C	+/-
1b	A	+
2b	B	+
2b	B	+/-
2b ^a	B	+
5	D	-

* Daten können auf andere Als extrapoliert werden

Letrozole and palbociclib (vs. letrozole alone)

1. Finn RS, et al. Palbociclib and Letrozole in Advanced Breast Cancer. N Engl J Med. 2016;375(20):1925-1936.
2. Finn RS, et al. The cyclin-dependent kinase 4/6 inhibitor palbociclib in combination with letrozole versus letrozole alone as first-line treatment of oestrogen receptor-positive, HER2-negative, advanced breast cancer (PALOMA-1/TRIO-18): a randomised phase 2 study. Lancet Oncol 2015;16(1):25-35.

Fulvestrant 500 mg plus Palbociclib (vs. Fulvestrant alone)

1. Turner NC, Ro J, André F, et al; PALOMA3 Study Group. Palbociclib in Hormone-Receptor-Positive Advanced Breast Cancer. N Engl J Med. 2015 Jul 16;373(3):209-19.

Letrozol plus Ribociclib

1. Hortobagyi GN, et al. Ribociclib as First-Line Therapy for HR-Positive, Advanced Breast Cancer. N Engl J Med. 2016;375(18):1738-1748.

Fulvestrant plus Abemaciclib

1. Sledge GW Jr, et al. MONARCH 2: Abemaciclib in Combination With Fulvestrant in Women With HR+/HER2- Advanced Breast Cancer Who Had Progressed While Receiving Endocrine Therapy. J Clin Oncol. 2017;35(25):2875-2884.

Non-steroidal AI plus Abemaciclib

1. Goetz MP, et al. MONARCH 3: Abemaciclib As Initial Therapy for Advanced Breast Cancer. J Clin Oncol. 2017 ;35(32):3638-3646.

Exemestane and everolimus (vs. exemestane alone)

1. Baselga J, Campone M et al. Everolimus in postmenopausal hormone-receptor-positive advanced breast cancer. N Engl J Med.;366(6):520-9. 2012
2. Jerusalem G, et al. Safety of everolimus plus exemestane in patients with hormone-receptor-positive, HER2-negative locally advanced or metastatic breast cancer progressing on prior non-steroidal aromatase inhibitors: primary results of a phase IIIb, open-label, single-arm, expanded-access multicenter trial (BALLET). Ann Oncol. 2016;27(9):1719-25

Tamoxifen and everolimus

1. Bachelot T, et al. Randomized Phase II Trial of Everolimus in Combination With Tamoxifen in Patients With Hormone Receptor-Positive, Human Epidermal Growth Factor Receptor 2-Negative Metastatic Breast Cancer With Prior Exposure to Aromatase Inhibitors: A GINECO Study. J Clin Oncol 2012; 30: 2718-2724.

Fulvestrant and everolimus

1. Kornblum NS, et al. PreECOG 0102: A randomized, double-blind, phase II trial of fulvestrant plus everolimus or placebo in post-menopausal women with hormone receptor (HR)-positive, HER2-negative metastatic breast cancer (MBC) resistant to aromatase inhibitor (AI) therapy. SABCS 2016,#S1-02

Letrozole and everolimus

1. Gradishar WJ, et al. BOLERO-4: Multicenter, open-label, phase II study of everolimus plus letrozole as first-line therapy in ER+, HER2- metastatic breast cancer. J Clin Oncol 31, 2013 (suppl; abstr TPS661)

Abemaciclib Monotherapie

1. Dickler MN, et al. MONARCH 1, A Phase II Study of Abemaciclib, a CDK4 and CDK6 Inhibitor, as a Single Agent, in Patients with Refractory HR⁺/HER2⁻ Metastatic Breast Cancer. Clin Cancer Res. 2017;23(17):5218-5224.

Endokrine Therapie der postmenopausalen Patientin mit HER2-negativem metastasiertem Mammakarzinom in Kombination mit Bevacizumab

	Oxford		
	LoE	GR	AGO
■ Erhaltungstherapie mit Bevacizumab plus endokrine Therapie nach Remission unter Chemotherapie mit Bevacizumab	1b	B	+/-
■ Bevacizumab plus endokrine Therapie als Erstlinientherapie bei lokal fortgeschrittener oder metastasierter Erkrankung	1b	B	+/-

Maintenance of bevacizumab plus endocrine therapy

1. Tredan O, et al. A phase III trial of exemestane plus bevacizumab maintenance therapy in patients with metastatic breast cancer after first-line taxane and bevacizumab: a GINECO group study. Ann Oncol 2016; 27(6):1020–1029.

Bevacizumab plus endocrine treatment as first line

1. Martín M, Loibl S, et al. Bevacizumab plus endocrine treatment as first line therapy for advanced diseasePhase III trial evaluating the addition of bevacizumab to endocrine therapy as first-line treatment for advanced breast cancer: the letrozole/fulvestrant and avastin (LEA) study. J Clin Oncol. 2015 ;33(9):1045-52.
2. Dickler MN, et al. Phase III Trial Evaluating Letrozole As First-Line Endocrine Therapy With or Without Bevacizumab for the Treatment of Postmenopausal Women With Hormone Receptor-Positive Advanced-Stage Breast Cancer: CALGB 40503 (Alliance). J Clin Oncol. 2016;34(22):2602-9.

PARP-Inhibitoren beim HER2-negativen, gBRCA mutierten, metastasiertem Mammakarzinom

- **Olaparib**
 - **TNBC**
 - **ER+**

Oxford		
LoE	GR	AGO
1b	B	+
2b	B	+
2b	C	+/-

Olaparib

1. Robson M, et al. Olaparib for Metastatic Breast Cancer in Patients with a Germline BRCA Mutation. N Engl J Med. 2017;377(6):523-533.

Diagnostik und Therapie primärer und metastasierter Mammakarzinome

HER2-positives und HR-positives metastasiertes Mammakarzinom

Endokrine Therapie der postmenopausalen HER2-positiven metastasierten Mammakarzinompatientin

- Anastrozol und Trastuzumab
- Letrozol und Trastuzumab
- Letrozol und Lapatinib
- Fulvestrant und Lapatinib
- Aromataseinhibitor und Trastuzumab / Pertuzumab*

Oxford		
LoE	GR	AGO
1b	B	+/-
2b	B	+/-
1b	B	+/-
1b	B	+/-
2b ^a	B	+/-

Geringe Wirksamkeit einer alleinigen endokrinen Therapie.

Eine Induktions-Chemotherapie zusammen mit einer anti-HER2-Therapie (gefolgt von endokriner plus anti-HER2-Erhaltungstherapie) sollte in Erwägung gezogen werden!

* Studienteilnahme empfohlen

Anastrozole and trastuzumab

1. Kaufman B, et al. Trastuzumab plus anastrozole versus anastrozole alone for the treatment of postmenopausal women with human epidermal growth factor receptor 2-positive, hormone receptor-positive metastatic breast cancer: results from the randomized phase III TAnDEM study. J Clin Oncol. 2009 Nov 20;27(33):5529-37.
2. Giordano SH, et al. American Society of Clinical Oncology. Systemic therapy for patients with advanced human epidermal growth factor receptor 2-positive breast cancer: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol. 2014 Jul 1;32(19):2078-99.
3. Riemsma R, et al. Systematic review of lapatinib in combination with letrozole compared with other first-line treatments for hormone receptor positive (HR+) and HER2+ advanced or metastatic breast cancer (MBC). Curr Med Res Opin. 2012 Aug;28(8):1263-79.

Letrozole and trastuzumab

1. Huober J, et al. Higher efficacy of letrozole in combination with trastuzumab compared to letrozole monotherapy as first-line treatment in patients with HER2-positive, hormone-receptor-positive metastatic breast cancer - results of the eLEcTRA trial. Breast. 2012 ;21(1):27-33.
2. Giordano SH, et al. American Society of Clinical Oncology. Systemic therapy for patients with advanced human epidermal growth factor receptor 2-positive breast

cancer: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol. 2014 Jul 1;32(19):2078-99.

3. Riemsma R, et al. Systematic review of lapatinib in combination with letrozole compared with other first-line treatments for hormone receptor positive(HR+) and HER2+ advanced or metastatic breast cancer(MBC). Curr Med Res Opin. 2012 Aug;28(8):1263-79.

Letrozole and lapatinib

1. Johnston S, Pippin J Jr, Pivot X, et al. Lapatinib combined with letrozole versus letrozole and placebo as first-line therapy for postmenopausal hormone receptor-positive metastatic breast cancer. J Clin Oncol. 2009 Nov 20;27(33):5538-46.
2. Riemsma R, Forbes CA, Amonkar MM, et al. Systematic review of lapatinib in combination with letrozole compared with other first-line treatments for hormone receptor positive(HR+) and HER2+ advanced or metastatic breast cancer(MBC). Curr Med Res Opin. 2012 Aug;28(8):1263-79.
3. Grassadonia A, Caporale M, Tinari N, et al. Effect of targeted agents on the endocrine response of breast cancer in the neoadjuvant setting: a systematic review. J Cancer. 2015 May 12;6(6):575-82.
4. Giordano SH, Temin S, Kirshner JJ, et al; American Society of Clinical Oncology. Systemic therapy for patients with advanced human epidermal growth factor receptor 2-positive breast cancer: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol. 2014 Jul 1;32(19):2078-99.

Fulvestrant and lapatinib

1. Burstein HJ, Cirincione CT, Barry WT et al: Endocrine Therapy With or Without Inhibition of Epidermal Growth Factor Receptor and Human Epidermal Growth Factor Receptor 2: A Randomized, Double-Blind, Placebo-Controlled Phase III Trial of Fulvestrant With or Without Lapatinib for Postmenopausal Women With Hormone Receptor-Positive Advanced Breast Cancer-CALGB 40302 (Alliance). J Clin Oncol 32:3959-3966 (2014)

AI and trastuzumab/pertuzumab

1. Arpino G, et al. A randomized, two-arm, open-label, multicenter phase II trial assessing the efficacy and safety of pertuzumab given in combination with trastuzumab plus an aromatase inhibitor in first-line patients with HER2-positive and hormone receptor-positive metastatic or locally advanced breast cancer. SABCS 2016, #S3-04

Simultane oder sequenzielle endokrin-zytostatische Behandlung

	Oxford		
	LoE	GR	AGO
■ Simultane endokrin-zytotoxische Therapie	1b	A	-
<ul style="list-style-type: none"> ▪ Höhere Ansprechraten und progressionsfreies ÜL möglich, keine Verbesserung des Gesamtüberlebens ▪ Kann Nebenwirkungsrate/Toxizität erhöhen 			
■ Endokrine Erhaltungstherapie +/- Anti HER2 Therapie nach Ansprechen auf eine Chemotherapie +/- Anti-HER2 Therapie	2b	B	+
<ul style="list-style-type: none"> ▪ Verlängert das progressionsfreie Überleben 			

Concomitant endocrine-cytotoxic treatment

1. Sledge GW, Hu P, Falkson G, et al. Comparison of chemotherapy with chemohormonal therapy as first-line therapy for metastatic, hormone-sensitive breast cancer: An eastern cooperative oncology group study. J Clin Oncol 18, 262-266, 2000.
2. Partridge AH, Burstein HJ, Winer EP. Side effects of chemotherapy and combined chemohormonal therapy in women with early-stage breast cancer. J Natl Cancer Inst Monogr. 2001;(30):135-42.
3. Boccardo F1, Amoroso D, Rubagotti A, et al. Endocrine therapy of breast cancer. The experience of the Italian Cooperative Group for Chemohormonal Therapy of Early Breast Cancer (GROCTA). Ann N Y Acad Sci. 1993 Nov 30;698:318-29.

Maintenance endocrine therapy after chemotherapy induced response

1. Sutherland S, Miles D, Makris A. Use of maintenance endocrine therapy after chemotherapy in metastatic breast cancer. Eur J Cancer. 2016 Dec;69:216-222.
2. Rossi S, Schinzari G, Basso M, et al. Maintenance hormonal and chemotherapy treatment in metastatic breast cancer: a systematic review. Future Oncol. 2016 May;12(10):1299-307