Diagnostik und Therapie früher und fortgeschrittener Mammakarzinome

Guidelines Breast
Version 2019.1D

Duktales Carcinoma in situ (DCIS)

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Version 2019.1D

- **Versionen 2002–2018:**
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- **Version 2019:**
  Bauerfeind / Schütz

Prätherapeutische Abklärung suspekter Läsionen (BIRADS 4)

	Oxford LoE	Oxford GR	Oxford AGO
▪ Mammographie	1b	B	++
▪ Vergrößerungsaufnahmen von Mikroverkalkungen	4	C	++
▪ Steigerung der Detektionsrate von G1/G2 DCIS durch digitale Mammographie (versus konventionell)	2b	B	+
▪ Stereotaktische Stanzbiopsie / Vakuumbiopsie (VAB)	2b	B	++
▪ Präparateradiographie	2b	B	++
▪ Setzen eines Markierungsclips in der Biopsieregion, wenn die Läsion komplett entfernt wurde	5	D	++
▪ MRT zur Festlegung der Ausdehnung	1b	B	+/-
▪ Klinische Untersuchung	5	D	++
▪ Feinnadelpunktion / duktale Lavage	5	D	-
▪ Interdisziplinäre Tumorboard-Präsentation	5	D	++

Mammographie

1. Li J, Zhang H, Jiang H, Guo X et al. Diagnostic Performance of Digital Breast Tomosynthesis for Breast Suspicious Calcifications From Various Populations: A Comparison With Full-field Digital Mammography. Comput Struct Biotechnol J. 2018 Dec 20;17:82-89.

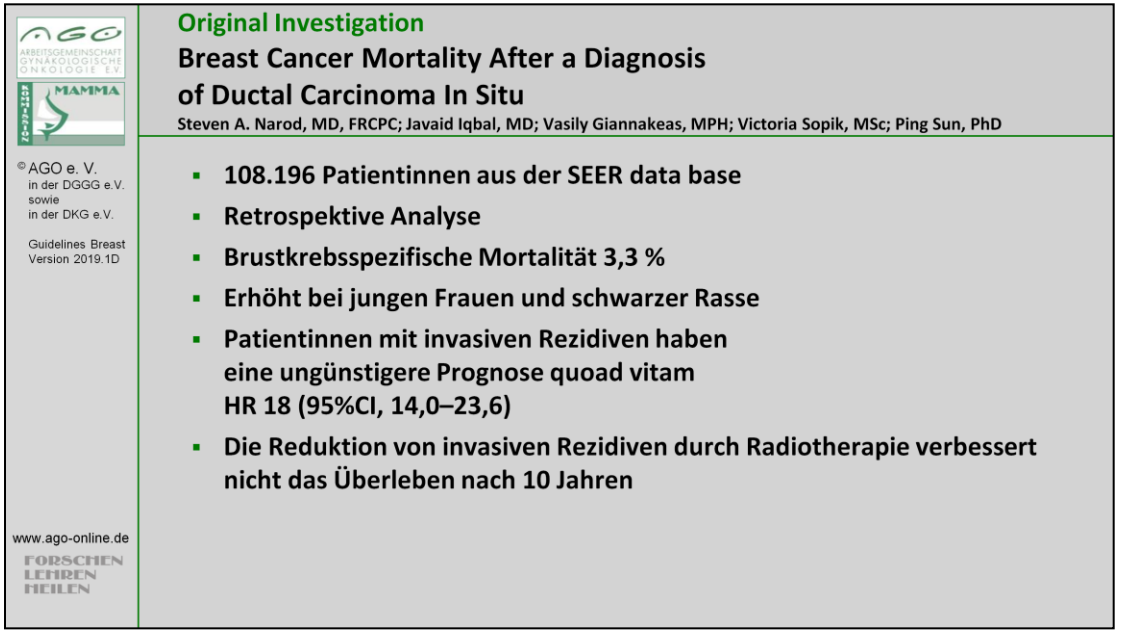
Präoperatives MRT hat keinen Einfluss auf die LRR und das OS

1. Vapiwala N, Hwang WT, Kushner CJ, et al. No impact of breast magnetic resonance imaging on 15-year outcomes in patients with ductal carcinoma in situ or early-stage invasive breast cancer managed with breast conservation therapy. Cancer. 2017;123(8):1324-1332.
2. Ryan R, Tawfik O, Jensen RA et al. . Current Approaches to Diagnosis and Treatment of Ductal Carcinoma In Situ and Future Directions. Prog Mol Biol Transl Sci. 2017;151:33-80.
3. Preibsch H, Beckmann J, Pawlowski J et al. Accuracy of Breast Magnetic Resonance Imaging Compared to Mammography in the Preoperative Detection and Measurement of Pure Ductal Carcinoma In Situ: A Retrospective _Radiol. 2018 Aug 24. pii: S1076-6332(18)30383-0.

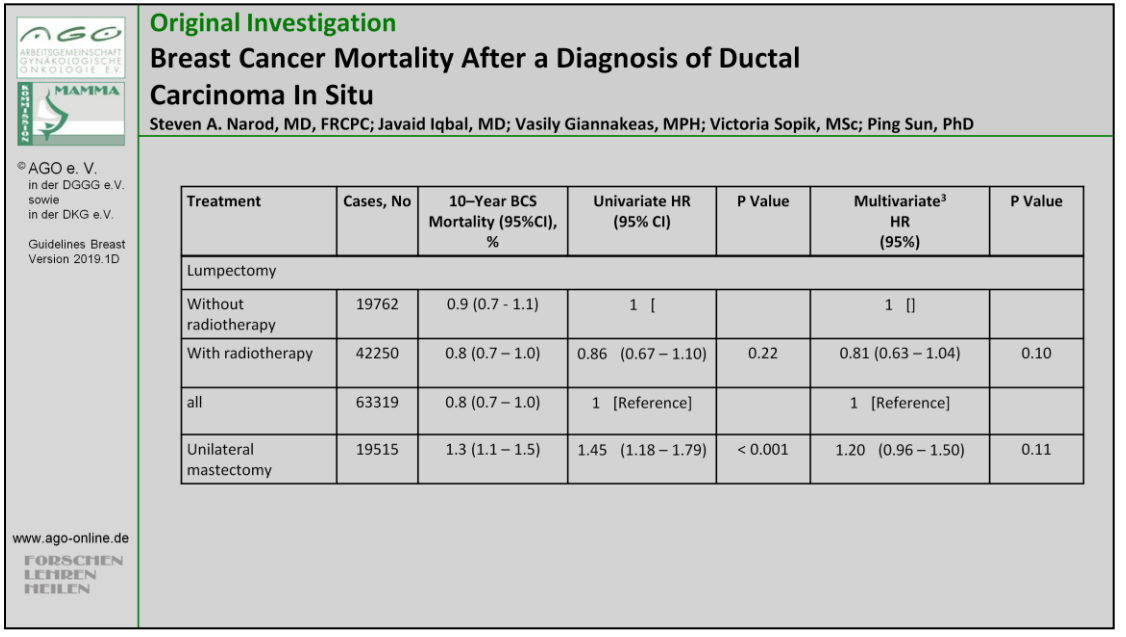
4. So A, De La Cruz LM, Williams AD et al. impact of preoperative magnetic resonance imaging and lumpectomy cavity shavings on re-excision rate in pure ductal carcinoma in situ-A single institution's experience. J Surg Oncol. 2018 Mar;117(4):558-566.

Molecular Subtyping

1. Nofech-Mozes S, Hanna W, Rakovitch E. Molecular Evaluation of Breast Ductal Carcinoma in Situ with Oncotype DX DCIS. Am J Pathol. 2018 Dec 31. pii: S0002-9440(18)30581-9.



1. Steven A. Narod, MD, FRCPC; Javaid Iqbal, MD; Vasily Giannakeas, MPH; et al; JAMA Oncol. doi:10.1001/jamaoncol.2015.2510 Published online August 20, 2015.



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Guidelines Breast
Version 2019.1D

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FORSCHEN
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Original Investigation

Breast Cancer Mortality After a Diagnosis of Ductal Carcinoma In Situ

Steven A. Narod, MD, FRCPC; Javaid Iqbal, MD; Vasily Giannakeas, MPH; Victoria Sopik, MSc; Ping Sun, PhD

Treatment	Cases, No	10–Year BCS Mortality (95%CI), %	Univariate HR (95% CI)	P Value	Multivariate[3] HR (95%)	P Value
Lumpectomy						
Without radiotherapy	19762	0.9 (0.7 - 1.1)	1 [		1 []	
With radiotherapy	42250	0.8 (0.7 – 1.0)	0.86 (0.67 – 1.10)	0.22	0.81 (0.63 – 1.04)	0.10
all	63319	0.8 (0.7 – 1.0)	1 [Reference]		1 [Reference]	
Unilateral mastectomy	19515	1.3 (1.1 – 1.5)	1.45 (1.18 – 1.79)	< 0.001	1.20 (0.96 – 1.50)	0.11

1. Steven A. Narod, MD, FRCPC; Javaid Iqbal, MD; Vasily Giannakeas, MPH; et al; JAMA Oncol. doi:10.1001/jamaoncol.2015.2510 Published online August 20, 2015.

1. Kirsty E. Stuart, Nehmat Houssami, Richard Taylor, et al. Long-term outcomes of ductal carcinoma in situ of the breast: a systematic review, meta-analysis and meta-regression analysis. BMC Cancer (2015) 15:890.
2. Katrina B. Mitchell and Henry Kuerer. Ductal Carcinoma In Situ: Treatment Update and Current Trends. Curr Oncol Rep (2015) 17: 48
3. Elizabeth M. Ward, Carol E. DeSantis, Chun Chieh Lin,et al. Cancer Statistics: Breast Cancer In Situ. CA Cancer J Clin 2015;65:481–495.
4. Benjamin D. Smith. When Is Good Enough Really Good Enough? Defining the Role of Radiation in Low-Risk Ductal Carcinoma In Situ. J Clin Oncol 2015; 33(7): 686 – 692.
5. Laura Esserman, Christina Yau. Rethinking the Standard for Ductal Carcinoma In Situ Treatment. JAMA Oncology Published online August 20, 2015.
6. Steven A. Narod, Javaid Iqbal, Vasily Giannakeas, et al. Breast Cancer Mortality After a Diagnosis of Ductal Carcinoma In Situ. JAMA Oncol. doi:10.1001/jamaoncol.2015.2510 Published online August 20, 2015.
7. Hamilton SN, Nichol A, Wai E et al. Local Relapse After Breast-Conserving Therapy Versus Mastectomy for Extensive Pure Ductal Carcinoma In Situ ≥4 cm. Int J Radiat Oncol Biol Phys. 2018 Sep 22. pii: S0360-3016(18)33801-X

8. Gradishar WJ, Anderson BO, Balassanian R et al. Breast Cancer, Version 4.2017, NCCN Clinical Practice Guidelines in Oncology. J Natl Compr Canc Netw. 2018 Mar;16(3):310-320.

Exzision (drahtmarkiert)

1. Houssami N, Ambrogetti D, Marinovich L et al. Accuracy of a preoperative model for predicting invasive breast cancer in women with ductal carcinoma in situ on vacuum assisted core needle biopsy. Ann Surg Oncol 2011;18(5):1364-71
2. Saadai P, Moezzi M et al. Preoperative and intraoperative predictors of positive margins after breast-conserving surgery: a retrospective review. Breast Cancer 2011; 18: 221-225
3. Kumar S, Sacchini V. The Surgical Management of Ductal Carcinoma In Situ. The Breast Journal 2010; 16: S 49-S52
4. Hwang ES. The Impact of Surgery on Ductal Carcinoma In Situ Outcomes: The Use of Mastectomy. J Natl Cancer Inst Monogr 2010; 41: 197-199.
5. Ryan R, Tawfik O, Jensen RA, et al. Current Approaches to Diagnosis and Treatment of Ductal Carcinoma In Situ and Future Directions. Prog Mol Biol Transl Sci. 2017;151:33-80.
6. Janssen NNY, van la Parra RFD, Loo CE et al. Breast conserving surgery for extensive DCIS using multiple radioactive seeds. Eur J Surg Oncol. 2018 Jan;44(1):67-73.

Flankierende Drahtmarkierung bei großen Läsionen

Präparatradiographie

1. Kuerer HM, Smith BD, Chavez-MacGregor M, et al. DCIS Margins and Breast Conservation: MD Anderson Cancer Center Multidisciplinary Practice Guidelines and Outcomes. J Cancer. 2017;8(14):2653-2662.

Ohne Einfluss auf NRR

1. DVerstehenden DPA, Keizer LGG, Schlooz-Vries MS, et al: Performance characteristics of specimen radiography for margin assessment for ductal carcinoma in situ: a systematic review. Breast Cancer Res Treat 2017:166:669–679.

„A literature search was conducted for diagnostic studies up to April 2017 concerning SR for intra-operative margin assessment of breast lesions with pure DCIS or with DCIS components. Studies reporting sensitivity and specificity calculated using final pathology report as ref- erence test were included. Due to improved imaging technology, studies published more than 15 years ago were excluded. Methodological quality was assessed using quality assessment of diagnostic accuracy studies-2 checklist. Due to clinical and methodological diversity, meta-analysis was considered not useful.

Results Of 235 citations identified, 9 met predefined inclusion criteria and documented diagnostic efficacy data. Sensitivity ranged from 22 to 77% and specificity ranged from 51 to 100%. Positive predictive value and negative predictive value ranged from 53 to 100% and 32 to 95%, respectively. High or unclear risk of bias was found in reference standard in 5 of 9 studies. High concerns regarding applicability of index test were found in 6 of 9 studies.

Conclusions The present results do not support the routine use of intra-operative specimen radiography to reduce the rate of positive margins in patients undergoing breast- conserving surgery for pure DCIS or the DCIS component in invasive cancer. Future studies need to differentiate between initial and final specimen margin involvement. This could provide surgeons with a number needed to treat for a more applicable outcome.“

Intraoperative Sonographie (darstellbarer Befund)

1. Ahmed M, Douek M. Intra-operative ultrasound versus wire-guided localization in the surgical management of non-palpable breast cancers: systematic review and meta-analysis. Breast Cancer Res Treat. 2013; 140(3): 435-446.

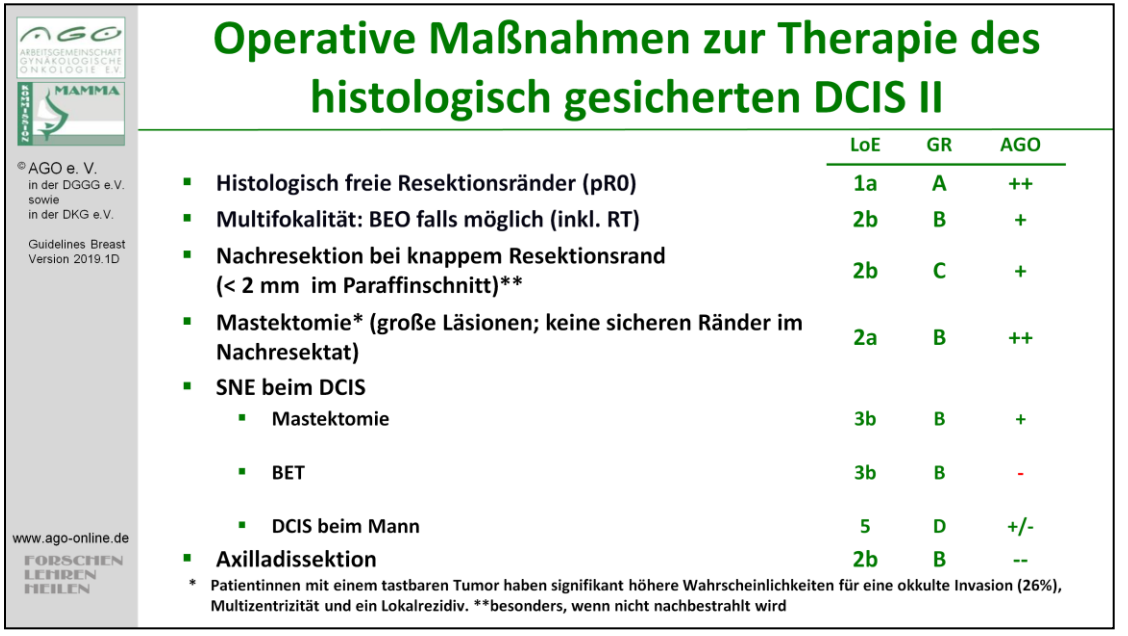
Sofortige Nachresektion bei knappen Resektionsrändern (Präparateradiographie)

1. Thill M, Röder K, Diedrich K et al. Intraoperative assessment of surgical margins during breast conserving surgery of durctal carcinoma in situ by use of radiofrequency spectroscopy. The Breast 2011(11) 579-580
2. Guidroz JA, Larrieux G, Liao J et al. Sampling of secondary margins decreases the need for re-excision after partial mastectomy Surgery. 2011; 150: 802 – 809
3. Fisher CS, Klimberg S, Khan S, et al. Margin Index is not a reliable toll for predicting residual disease after breast- conserving surgery for DCIS. Ann Surg Oncol 2011; 18: 3155-3159
4. Kumar S, Sacchini V. the Surgical Management of Ductal Carcinoma In Situ. The Breast Journal 2010; 16: S49 – S52
5. Kennedy S, Geradts J, Bydlon T, et al. Optical breast cancer margin assessment: an observational study of the effects of tissue heterogeneity on optical contrast. Breast Cancer Res 2010
6. Javid SH, Anderson BO. Tailored Strategies for DCIS Management. Oncology 2011; 25 (9):861-3
7. Kulkarni S. Management of DCIS: A Work in Progress. Oncology 2011; 25 (9): 852-6
8. Thill M, Dittmer C, Baumann K, et al. MarginProbe®--final results of the German post-market study in breast conserving surgery of ductal carcinoma in situ. Breast. 2014 Feb;23(1):94-6. doi: 10.1016/j.breast.2013.11.002. Epub 2013 Dec 2.
9. Kuerer HM, Smith BD, Chavez-MacGregor M, et al. DCIS Margins and Breast Conservation: MD Anderson Cancer Center Multidisciplinary Practice Guidelines and Outcomes. J Cancer. 2017;8(14):2653-2662.

Intraoperative Schnellschnittdiagnostik

1. Kuerer HM, Smith BD, Chavez-MacGregor M et al. DCIS Margins and Breast Conservation: MD Anderson Cancer Center Multidisciplinary Practice Guidelines and Outcomes. J Cancer. 2017;8(14):2653-2662.
2. Laws A, Brar MS, Bouchard-Fortier A, et al. surgery for ductal carcinoma in situ. J Surg Oncol. 2018 Dec;118(7):1205-1211.

Interdisziplinäre Tumorboard-Präsentation



Histologisch freie Resektionsränder (pR0)

1. Lagios MD, Page DL, Silverstein MJ. Prospective study of wide excision alone for ductal carcinoma in situ of the breast. J Clin Oncol 2006;24:3809-11
2. MacAusland SG, Hepel JT, Chong FK, et al. An attempt to independently verify the utility of the Van Nuys Prognostic Index for ductal carcinoma in situ. Cancer 2007;110:2648-53
3. Macdonald HR, Silverstein MJ, Lee LA, et al. Margin width as the sole determinant of local recurrence after breast conservation in patients with ductal carcinoma in situ of the breast. Am J Surg 2006 192:420-2
4. Meijnen P, Oldenburg HS, Peterse JL, et al. Clinical outcome after selective treatment of patients diagnosed with ductal carcinoma in situ of the breast. Ann Surg Oncol 2007 Nov 7; [Epub ahead of print]
5. Lee RJ, Vallow LA, McLaughlin SA, et al. Ductal carcinoma in situ of the breast.Int J Surg Oncol. 2012;2012:123549. doi: 10.1155/2012/123549. Epub 2012 Jul 18.
6. Badruddoja M. Ductal carcinoma in situ of the breast: a surgical perspective. Int J Surg Oncol. 2012;2012:761364. doi: 10.1155/2012/761364. Epub 2012 Sep 4.
7. Hassani A, Griffith C, Harvey J. Size does matter: High volume breast surgeons accept smaller excision margins for wide local

excision--a national survey of the surgical management of wide local excision margins in UK breast cancer patients. Breast. 2013 Oct;22(5):718-22.

8. Morrow M., et al: Society of Surgical Oncology –American Society for Radiation Oncology-American Society of Clinical Oncology Consensus Guideline on Margins for Breast-Conserving Surgery with Whole-Breast Irradiation in Ducctal Carcinoma in Situ J CO 2016 34;33 :4040-4046

Multifokalität: BET falls möglich (inkl. RT)

1. Meijnen P, Bartelink H. Multifocal ductal carcinoma in situ of the breast: A contraindication for breast-conserving treatment? J Clin Oncol 2007;25:5548–5549
2. Rakovitch E, Pignol JP, Hanna W, et al. Significance of multifocality in ductal carcinoma in situ: outcomes of women treated with breast-conserving therapy. J Clin Oncol 2007;25:5591–5596

Nachresektion bei knappem Resektionsrand (< 2 mm im Paraffinschnitt)

1. Dunne, C., J. P. Burke, et al. (2009). "Effect of margin status on local recurrence after breast conservation and radiation therapy for ductal carcinoma in situ." J Clin Oncol 27(10): 1615-1620.
2. Van Cleef A, Altintas S, Huizing M et al. Current view on ductal carcinoma in situ and importance of the margin thresholds: A review. Facts Views Vis Obgyn. 2014;6(4):210-8.

**besonders wenn nicht nachbestrahlt wird

3. Kuerer HM, Smith BD, Chavez-MacGregor M et al. DCIS Margins and Breast Conservation: MD Anderson Cancer Center Multidisciplinary Practice Guidelines and Outcomes. J Cancer. 2017;8(14):2653-2662.
4. Morrow M. De-escalating and escalating surgery in the management of early breast cancer. Breast. 2017 Aug;34 Suppl 1:S1-S4.

„The panelists emphasized that clinical judgment is necessary to determine whether patients with nega- tive margin widths less than 2 mm require re-excision based on the long-term rates of local control seen in National Surgical Adjuvant Breast and Bowel Project

(NSABP) trials, which used the negative margin definition of no ink on tumor [10] and on the results of the large single-institution study of Van Zee et al. [11] in which nega- tive margin width was not a predictor of local recurrence in patients receiving radiotherapy after controlling for multiple clinical vari- ables of interest. In the study of Van Zee et al., crude rates of local recurrence among the 2996 patients receiving radiotherapy were 10% for those with negative margins 2 mm or less in size, 7% for those with margins >2 mme10 mm, and 9% for margins >10 mm. Examples of factors to consider when deciding whether to re-excise a negative margin <2 mm include the extent of DCIS in proximity to the margin, which margin is close, the presence of residual calci- fications on mammogram, the cosmetic impact of re-excision, and the patient's life expectancy."

Mastektomie* (große Läsionen; keine sicheren Ränder im Nachresektat)

1. Ringberg A, Nordgren H, Thorstensson S, et al. Histopathological risk factors for ipsilateral breast events after breast conserving treatment for ductal carcinoma in situ of the breast--results from the Swedish randomised trial. Eur J Cancer 2007;43:291-8
2. NCCN and National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology: Breast Cancer - Version V.1.2007.
3. Solin LJ. Is excision alone adequate treatment for low-risk ductal carcinoma-in-situ of the breast? J Clin Oncol 2006;24:1017-1019
4. Vargas C, Kestin L, Go N, et al. Factors associated with local recurrence and cause-specific survival in patients with ductal carcinoma in situ of the breast treated with breast-conserving therapy or mastectomy. Int J Radiat Oncol Biol Phys 2005;63:1514-21
5. Carlson, G. W., A. Page, et al. (2007). "Local recurrence of ductal carcinoma in situ after skin-sparing mastectomy." J Am Coll Surg 204(5): 1074-1078; discussion 1078-1080.
6. Rudloff U, E Brogi et al. (2010): "The Influence of Margin Width and Volume of Disease Near Margin on Benefit of Radiation Therapy for Women With DCIS Treated With Breast-Conserving Therapy" Ann Surg (251) 583 – 591
7. Polyak K. Molecular markers for the diagnosis and management of ductal carcinoma in situ. J Natl Cancer Inst Monogr 2010; 41: 210-213
8. Houssami N, Ambrogetti D, Marinovich L et al. Accuracy of a preoperative model for predicting invasive breast cancer in women with ductal carcinoma in situ on vacuum assisted core needle biopsy. Ann Surg Oncol 2011;18(5):1364-71

SNE*

1. Killelea BK, Long JB, Dang W, et al. Associations Between Sentinel Lymph Node Biopsy and Complications for Patients with Ductal Carcinoma In Situ. Ann Surg Oncol. 2018 Jun;25(6):1521-1529.

Mastektomie

DCIS beim Mann

1. Chern J, Liao L, Baraldi R, et al. Case report: ductal carcinoma in situ in the male breast. Case Rep Radiol. 2012;2012:532527. doi: 10.1155/2012/532527. Epub 2012 Sep 26.

BET

1. Meijnen P, Oldenburg HS, Loo CE, et al. Risk of invasion and axillary lymph node metastasis in ductal carcinoma in situ diagnosed by core-needle biopsy. Br J Surg 2007;94:952-6
2. Miyake T, Shimazu K, Ohashi H, et al. Indication for sentinel lymph node biopsy for breast cancer when core biopsy shows ductal carcinoma in situ. The American Journal of Surgery 2011; 202: 59-65 :394095. doi: 10.5402/2012/394095. Epub 2012 May 14.
3. De Lorenzi F, Di Bella J, Maisonneuve P et al. Oncoplastic breast surgery for the management of ductal carcinoma in situ (DCIS): is it oncologically safe? A retrospective cohort analysis. Eur J Surg Oncol. 2018 Jul;44(7):957-962.

Axilladissektion

Resektionsränder

Residualer tumorassoziierter Mikrokalk

Alter

Größe

Grading

Komedonekrose

Architektur

1. Ringberg A, Nordgren H, Thorstensson S, et al. Histopathological risk factors for ipsilateral breast events after breast conserving treatment for ductal carcinoma in situ of the breast--results from the Swedish randomised trial. Eur J Cancer 2007;43:291-8
2. NCCN and National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology: Breast Cancer - Version V.1.2007.
3. Vargas C, Kestin L, Go N, et al. Factors associated with local recurrence and cause-specific survival in patients with ductal carcinoma in situ of the breast treated with breast-conserving therapy or mastectomy. Int J Radiat Oncol Biol Phys 2005;63:1514-21

4. Farhat G, R Walker et al. (2010): “Changes in Invasive Breast Cancer and Ductal Carcinoma In Situ Rates in Relation to the Decline in Hormone Therapy Use” J Clin Oncol (28)
5. Pinder SE, C Duggan et al. A new pathological system for grading DCIS with improved prediction of local recurrence: results from the UKCCCR/ANZ DCIS trial. Br J Cancer 2010; 103: 94 – 100
6. Kerlikowske K, AM Molinaro et al. Biomarker Expression and Risk of Subsequent Tumors After Initial Ductal Carcinoma In Situ Diagnosis. J Natl Cancer Inst 2010; 102: 627 – 637
7. Rudloff U, LM Jacks et al. Normogram for Predicting the Risk of Local Recurrence After Breast-Conserving Surgery for Ductal Carcinoma In Situ. J Clin Oncol 2010; 28: 3762 – 3769
8. Cuzick J, I Sestak et al. Effect of Tamoxifen and radiotherapy in women with locally excised ductal carcinoma in situ: long-term results form the UK / ANZ DCIS trial. Lancet Oncol 2011; 12: 21- 29
9. Lari S, Kuerer HM. Review: Biological Merkers in DCIS and Risk of Breast Recurrence: A Systematic Review. Journal of Cancer 2011; 2: 232-261
10. Harada S, Mick R, Roses R, et al. The significance of HER-2/neu Resceptor positivity and Immunophenotype in Ductal Carcinoma In Situ with Early Invasive Disease. J Surg Oncol 2011; 104: 458-465
11. Han K, Nofech-Mozes S, Narod S, et al. Expression of Her2neu in Ductal Carcinoma in situ is associated with Local Recurrence. Clinical Oncology 2011; 1-7 (epub ahead)
12. King TA, Sakr RA, Muhsen S, et al. Is there a Low-Grade Precursor Pathway in Breast Cancer? Ann Surg Oncol 2011;(epub ahead)
13. Chan P, Lim S. Predictors of Invasive Breast Cancer in Ductal Carcinoma In Situ initially diagnosed by Core Biopsy. Asian J Surg 2010; 33: 76-82
14. Liao N, Zhang GC, Liu YH, et al. HER2-positive status is an independent predictor for coexisting invasion of ductal carcinoma in situ of the breast presenting extensive DCIS component. Pathology Res Practice 2011; 207: 1-7
15. Dick AW, Sorbero MS, Ahrendt GM, et al. Comparative Effectiveness of Ductal Carcinoma In Situ Managemnt and the Roles of margins and Surgeons. J natl Cancer Inst 2011; 103:92-104
16. Brennan ME, Turner RM, Ciatto S, et al. Ductal Carcinoma in Situ at Core-Needle Biopsy: Meta-Aanlysis of Underestimation and Predictors of Invasive Breast Cancer. Radiology 2011; 260: 119-128

17. Wang S, Shamliyan T, Virnig BA, et al. Tumor characteristics as predictors of local recurrence after treatment of ductal carcinoma in situ: a meta-analysis. Breast Cancer Res Treat 2011; 127: 1-14
18. Holmes P, Lloyd J, Chervoneva I, et al. Prognostic Markers and Long-Term Outcomes in Ductal Carcinoma In Situ of the Breast Treated With Excision Alone. Cancer 2011; 117: 3650-7
19. Visser LL, Elshof LE, Schaapveld M et al. Clinicopathological Risk Factors for an Invasive Breast Cancer recurrence after Ductal Carcinoma *In Situ*-A Nested Case-Control Study. Clin Cancer Res. 2018 Aug 1;24(15):3593-3601.
20. Rakovitch E, Gray R, Baehner FL et al. Refined estimates of local recurrence risks by DCIS score adjusting for clinicopathological features: a combined analysis of ECOG-ACRIN E5194 and Ontario DCIS cohort studies. Breast Cancer Res Treat. 2018 Jun;169(2):359-369

Diagnostische Methode

1. Han JS, Molberg KH, Sarode V. Predictors of Invasion and Axillary Lymph Node Metastasis in Patients with a Core Biopsy Diagnosis of Ductal carcinoma In Situ: An Analysis of 255 Cases. The Breast Journal 2011; 17: 223-229
2. Barbalaco Neto G, Rossetti C, Fonseca FL, et al. Ductal carcinoma in situ in core needlebiopsies and its association with extensive in situ component in the surgical specimen. Int Arch Med. 2012 Jun 20;5(1):19.
3. Park HS, Kim HY, Park S et al. A nomogram for predicting underestimation of invasiveness in ductal carcinoma in situ diagnosed by preoperative needle biopsy. Breast. 2013 Oct;22(5):869-73.
4. Park HS, Park S, Cho J, et al. Risk predictors of underestimation and the need for sentinel node biopsy in patients diagnosed with ductal carcinoma in situ by preoperative needle biopsy. J Surg Oncol. 2013 Mar;107(4):388-92. doi: 10.1002/jso.23273. Epub 2012 Sep 24.

5. Schulz S, Sinn P, Golatta M, et al. Prediction of underestimated invasiveness in patients with ductal carcinoma in situ of the breast on percutaneous biopsy as rationale for recommending concurrent sentinel lymph node biopsy. Breast. 2013 Aug;22(4):537-42.
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7. Punglia RS, Jiang W, Lipsitz SR, et al. Clinical risk score to predict likelihood of recurrence after ductal carcinoma in situ treated with breast-conserving surgery. Breast Cancer Res Treat. 2017 Oct 28. doi: 10.1007/s10549-017-4553-5. [Epub ahead of print]

Fokalität

1. Meijnen P, Bartelink H. Multifocal ductal carcinoma in situ of the breast: A contraindication for breast-conserving treatment? J Clin Oncol 2007;25:5548–5549
2. Rakovitch E, Pignol JP, Hanna W, et al. Significance of multifocality in ductal carcinoma in situ: outcomes of women treated with breast-conserving therapy. J Clin Oncol 2007;25:5591–5596

(mod.) Van Nuys Prognose Index und MSKCC Nomogramm

1. Lagios MD, Page DL, Silverstein MJ. Prospective study of wide excision alone for ductal carcinoma in situ of the breast. J Clin Oncol 2006;24:3809-11
2. MacAusland SG, Hepel JT, Chong FK, et al. An attempt to independently verify the utility of the Van Nuys Prognostic Index for ductal carcinoma in situ. Cancer 2007;110:2648-53
3. Macdonald HR, Silverstein MJ, Lee LA, et al. Margin width as the sole determinant of local recurrence after breast conservation in patients with ductal carcinoma in situ of the breast. Am J Surg 2006 192:420-2
4. Meijnen P, Oldenburg HS, Peterse JL, et al. Clinical outcome after selective treatment of patients diagnosed with ductal carcinoma in situ of the breast. Ann Surg Oncol 2007 Nov 7; [Epub ahead of print]
5. Altintas S, Toussaint J, Durbecq V, et al. Fine Tuning of the Van Nuys Prognostic Index (VNPI) 2003 by Integrating the Genomic Grade Index (GGI): New Tools for Ductal Carcinoma In Situ (DCIS). The Breast Journal 2011; 17: 343-351

6. Fisher CS, Klimberg S, Khan S, et al. margin Index Is Not a Reliable Tool for Predeicting Residual Disease after Breast-Conserving Surgery for DCIS. Ann Surg Oncol (2011): 18: 3155-3159
7. Silverstein MJ, Lagios MD. Choosing Treatment for Patients With Ductal Carcinoma In Situ: Fine Tuning the University of Southern california/Van Nuys Prognostic Index. J natl Cancer Inst Monogr 2010; 41: 193-196
8. Rudloff U, Jacks LM, Goldberg JL, et al. Nomogram for predicting the risk of local recuurence after breast conserving surgery for ductal carcinoma in situ. J Clin Oncol 2010; 28(23): 3762-9
9. Van Zee KJ, Patil S. Validation of a nomogram for predicting risk of local recurrence for ductal carcinoma in situ. J Clin Oncol 2012; 30(25): 3143-4.
10. Sweldens C, Peeters S, van Limbergen E, et al. Öocal relapse after breast-conserving therapy for ductal carcinoma in situ: a Eurpüean single-center experience and external validation of the Memorial Sloan-Kettering Cancer Center DCIS nomogram. Cancer J 2014; 20(1): 1-7.

Palpables DCIS

Palpabel + COX-2+p16+Ki-67+

Palpabel + ER-, HER2, +Ki-67+

HER2-Überexpression

ER/PgR (positiv vs. negativ)

DCIS-Score

1. Solin LJ, Gray R, Baehner FL, et al. A multigene expression assay to predict local recurrence risk for ductal carcinoma in situ of the breast. J Natl Cancer Inst. 2013 May 15;105(10):701-10.
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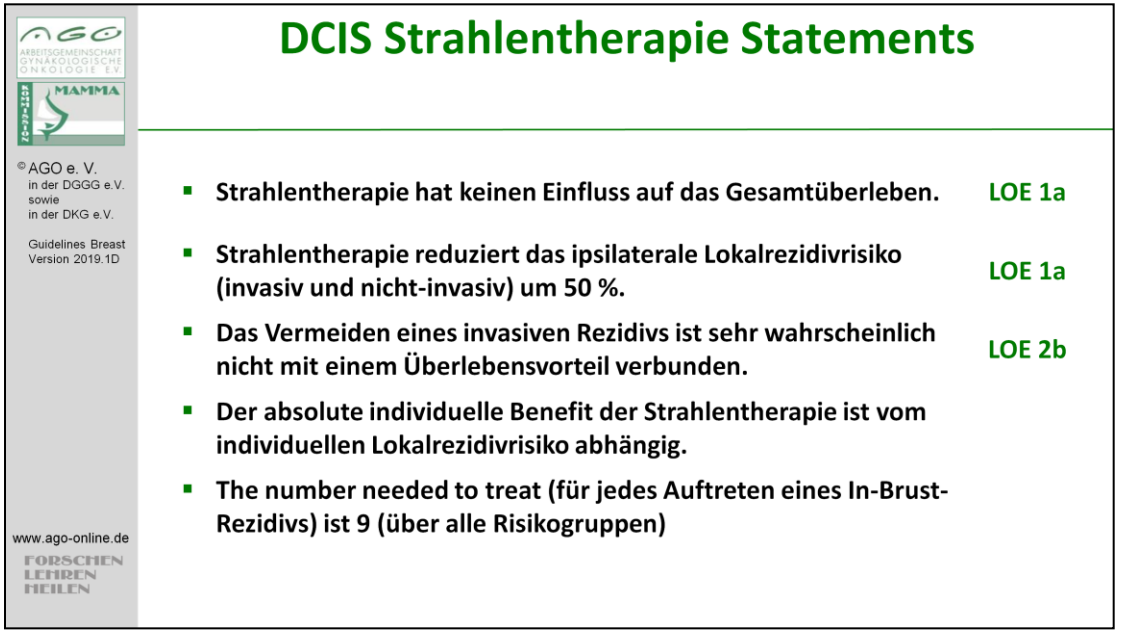

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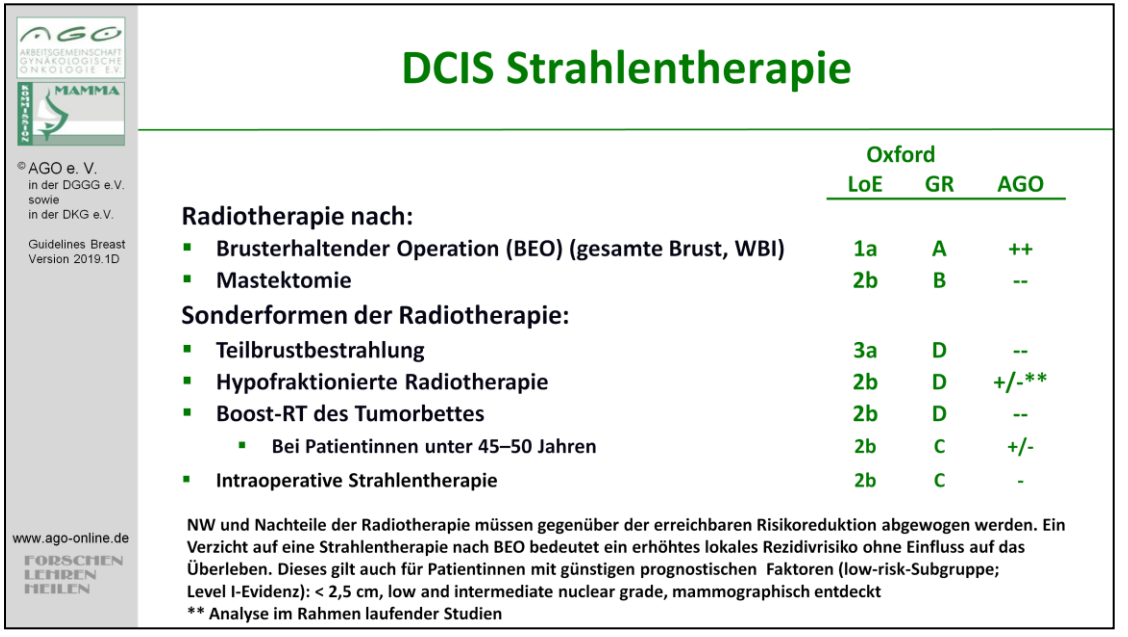

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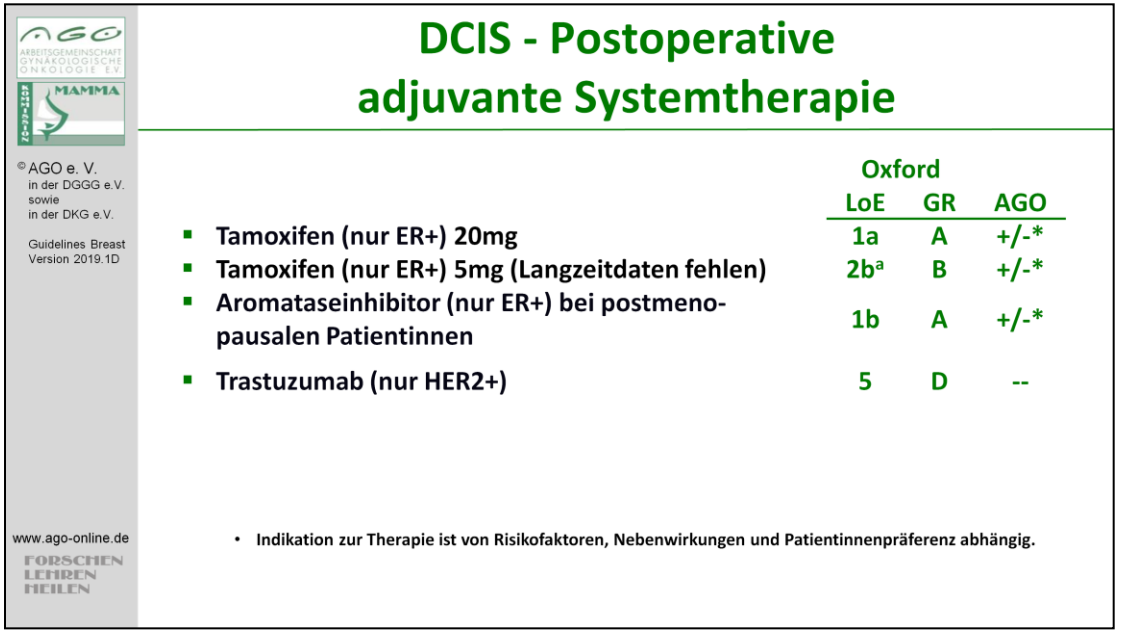
DCIS – Postoperative adjuvante Systemtherapie

Guidelines Breast
Version 2019.1D

- **Postoperative endokrine Therapie hat keinen Einfluss auf das Gesamtüberleben.** **LOE 1a**
- **Postoperative endokrine Therapie kann einen geringen Effekt auf die ipsilateralen invasiven Rezidive haben.** **LOE 1a**
- **Endokrine Therapie hat einen Effekt auf die kontralaterale invasive Rezidivrate und die ipsilaterale und kontralaterale DCIS-Rezidivrate.** **LOE 1a**
- **The number needed to treat (für jedes In-Brust-Rezidiv) ist 15.** **LOE 1a**



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<u>AI (wenn postmenopausal und Kontraindikationen gegen Tamoxifen)</u>

<u>Andere endokrine Optionen Trastuzumab (nur HER2+)</u>

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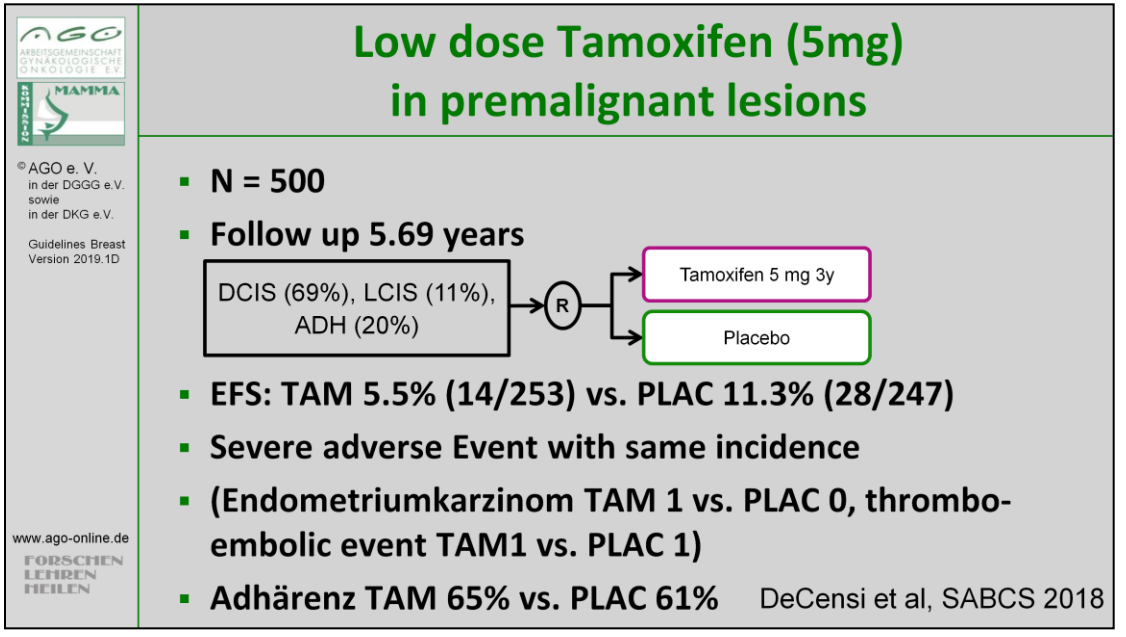

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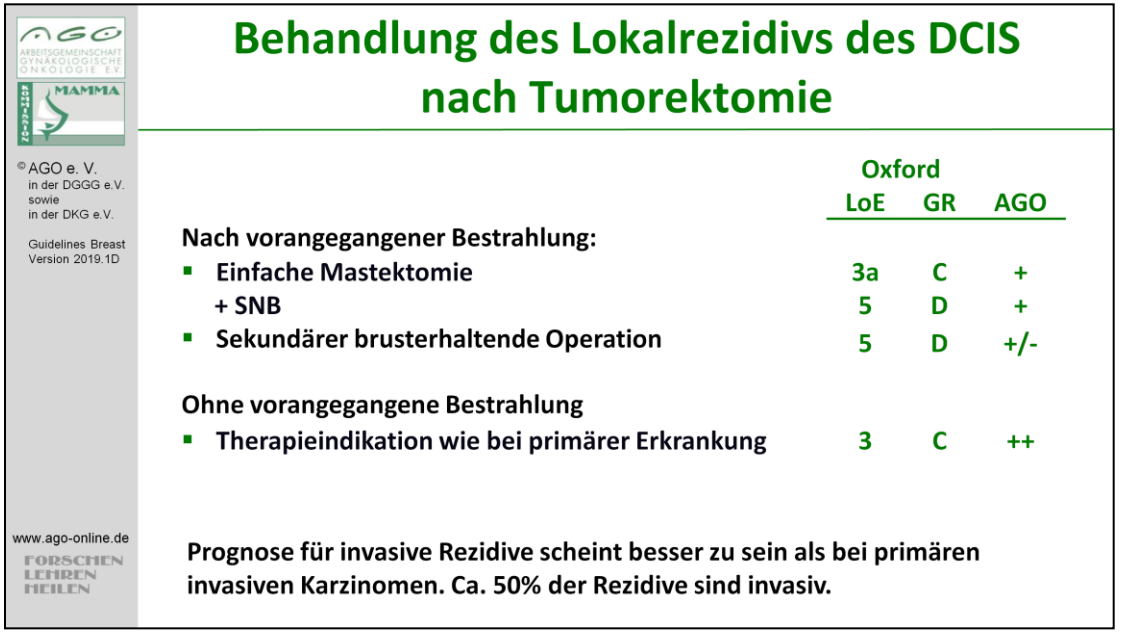

Nach Radiatio

Einfache Mastektomie

+ SN B

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Sekundäre Tumorektomie führt zu Rezidiven in bis zu 30 % der Fälle (NSABP B17)

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Keine Radiotherapie

Therapieindikation wie bei primär Erkrankung