Ductal Carcinoma in Situ (DCIS)
Ductal Carcinoma in Situ
DCIS

- **Version 2002:**
  Gerber

- **Versions 2003–2013:**
  Audretsch / Brunnert / Costa / Fersis / Friedrich / Hanf / Junkermann / Lux / Maass / Möbus / Nitz / Oberhoff / Scharl / Souchon / Thomssen

- **Version 2014:**
  Thill / Solomayer
Pretherapeutic Assessment of Suspicious Lesions (BIRADS IV)

- **Mammography**
  - Magnification view of microcalcification
  - Increase of detection rate of G1/G2 DCIS by full-field digital mammography (versus screen-film)

- **Stereotactic core needle / vacuum biopsy (VAB)**
  - Specimen radiography
  - Marker (Clip) left at biopsy site for location if lesion is completely removed

- **Assessment of extension**
  - MRI
  - Clinical examination
  - FNA / ductal lavage
  - Interdisciplinary board presentation

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**Oxford / AGO LoE / GR**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>LoE</th>
<th>Grade</th>
<th>Clinical Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammography</td>
<td>1b</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td>Magnification view of microcalcification</td>
<td>4</td>
<td>C</td>
<td>++</td>
</tr>
<tr>
<td>Increase of detection rate of G1/G2 DCIS by full-field digital mammography</td>
<td>2b</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td>Stereotactic core needle / vacuum biopsy (VAB)</td>
<td>2b</td>
<td>B</td>
<td>++</td>
</tr>
<tr>
<td>Specimen radiography</td>
<td>2b</td>
<td>B</td>
<td>++</td>
</tr>
<tr>
<td>Marker (Clip) left at biopsy site for location if lesion is completely removed</td>
<td>5</td>
<td>D</td>
<td>++</td>
</tr>
<tr>
<td>MRI</td>
<td>3a</td>
<td>C</td>
<td>+/-</td>
</tr>
<tr>
<td>Clinical examination</td>
<td>5</td>
<td>D</td>
<td>++</td>
</tr>
<tr>
<td>FNA / ductal lavage</td>
<td>5</td>
<td>D</td>
<td>-</td>
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<tr>
<td>Interdisciplinary board presentation</td>
<td>5</td>
<td>D</td>
<td>++</td>
</tr>
</tbody>
</table>
Surgical Treatment for Histologically Proven DCIS I

- Excisional biopsy (wire guided)
- Bracketing wire localization in large lesions
- Specimen radiography
- Intraoperative ultrasound (visible lesion)
- Immediate re-excision for close margins (specimen radiography)
- Intraoperative frozen section
- Interdisciplinary board presentation

Open biopsy in suspicious lesions (mammographical microcalcifications, suspicious US, MRI etc.) without preoperative needle biopsy should be avoided
### Surgical Treatment for Histologically Proven DCIS II

<table>
<thead>
<tr>
<th>Treatment Option</th>
<th>Oxford / AGO LoE / GR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histologically clear margins (R0)</td>
<td>2b C + +</td>
</tr>
<tr>
<td>Multifocal DCIS: BCT if feasible (incl. RT)</td>
<td>2b B +</td>
</tr>
<tr>
<td>Re-excision required for close margin ≤ 2 mm in paraffin section</td>
<td>2b C +</td>
</tr>
<tr>
<td>Mastectomy*</td>
<td></td>
</tr>
<tr>
<td>- Large lesions confirmed by multiple biopsies; no clear margins after re-excision</td>
<td>2a B ++</td>
</tr>
<tr>
<td>SNE*</td>
<td></td>
</tr>
<tr>
<td>- Mastectomy</td>
<td>3b B +</td>
</tr>
<tr>
<td>- In case of DCIS in the male breast</td>
<td>5 D +</td>
</tr>
<tr>
<td>- BCT: ≥ 5 cm or ≥ 2.5 cm + high nuclear grade/comedonecrosis</td>
<td>3b B +/-</td>
</tr>
<tr>
<td>ALND</td>
<td>2b B - -</td>
</tr>
</tbody>
</table>

* Patients who present with a palpable mass have a significantly higher potential for occult invasion (26%), multicentricity and local recurrence.
**DCIS – Prognostic Factors for the Incidence of Local- / Locoregional Recurrence**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Oxford / AGO</th>
<th>LoE / GR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resection margins</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Residual tumor-associated microcalcification</td>
<td>2b</td>
<td>C</td>
</tr>
<tr>
<td>Age</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Size</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Grading</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Comedo necrosis</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Architecture</td>
<td>2b</td>
<td>C</td>
</tr>
<tr>
<td>Method of diagnosis</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Focality</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>(mod.) Van Nuys Prognostic Index</td>
<td>1a</td>
<td>A</td>
</tr>
<tr>
<td>Palpable DCIS</td>
<td>2b</td>
<td>C</td>
</tr>
<tr>
<td>Palpable + COX-2+, p16+, Ki-67+</td>
<td>2b</td>
<td>C</td>
</tr>
<tr>
<td>Palpable + ER-, HER2+, Ki-67+</td>
<td>2b</td>
<td>C</td>
</tr>
<tr>
<td>HER2/neu (positive vs. negative)</td>
<td>1a</td>
<td>B</td>
</tr>
<tr>
<td>ER/PgR (positive vs. negative)</td>
<td>1a</td>
<td>B</td>
</tr>
<tr>
<td>DCIS-Score</td>
<td>2c</td>
<td>C</td>
</tr>
<tr>
<td>DCIS with microinvasion – treatment in analogy to invasive breast cancer</td>
<td>3b</td>
<td>C</td>
</tr>
<tr>
<td>Intrinsic subtypes (luminal A, B, HER2+, triple negative)</td>
<td>2b</td>
<td>C</td>
</tr>
</tbody>
</table>
**DCIS Radiotherapy**

Radiotherapy after:
- Breast conserving surgery (BCS)
- Mastectomy

Modality:
- Partial breast radiotherapy (PBI)
- Hypofractionated radiotherapy regimens
- Radiotherapy boost on the tumor bed
  - Women younger than 45-50 years

<table>
<thead>
<tr>
<th>Oxford / AGO LoE / GR</th>
<th>1a</th>
<th>A</th>
<th>++</th>
</tr>
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<tbody>
<tr>
<td>BCS</td>
<td>2b</td>
<td>B</td>
<td>--</td>
</tr>
<tr>
<td>Hypofractionated radiotherapy regimens</td>
<td>2b</td>
<td>D</td>
<td>-/+*</td>
</tr>
<tr>
<td>Radiotherapy boost on the tumor bed</td>
<td>2b</td>
<td>D</td>
<td>--</td>
</tr>
<tr>
<td>Women younger than 45-50 years</td>
<td>2b</td>
<td>C</td>
<td>+/-</td>
</tr>
</tbody>
</table>

Side effects and disadvantages of radiotherapy must be balanced against risk reduction. Omitting radiotherapy implies elevated risk for local recurrence without effect for overall survival even in the subset of “good risk” patients. There remains a lack of level-1 evidence supporting the omission of adjuvant radiotherapy in selected low-risk cases.

* Analysis in ongoing trials
Cochrane Analysis
Radiation after Surgery (all/with Radiation after Breast Conserving Surgery)

Goodwin A, Parker S, Ghersi D, Wilcken N.
DCIS Postoperative Systemic Treatment

- Tamoxifen (only ER+)
  - AI if postmenopausal and contraindication against tamoxifen
- Other endocrine options
- Trastuzumab (only HER2+)

| Oxford / AGO LoE / GR | 1a | A | +
|-----------------------|----|---|---
|                       | 5  | D | +/-*
|                       | 5  | D | -*
|                       | 5  | D | --
Cochrane Analysis
Tamoxifen after DCIS (all/with Radiation)

Staley H, McCallum I, Bruce J.
Postoperative tamoxifen for ductal carcinoma in situ.
Local Recurrence of DCIS after Tumorectomy w/o Irradiation

- MRI (follow-up after history of LCIS)  
  2b B +/-

- Simple mastectomy  
  3a C ++

- Secondary tumorectomy leads to recurrence rates about 30% (NSABP B17)  
  5 D +/-
  - Plus radiotherapy (in case of no previous RT)  
    3 C ++

Prognosis for invasive recurrence seems to be better than in case of primary invasive breast cancer; ~ 50% of recurrences are invasive.
Key Points

- DCIS is a local disease and should primarily be treated with local approaches only
- Addition of Tamoxifen to radiotherapy reduces risk of local recurrence (LoE 1a)
- BCT offers an acceptable local control rate for many patients with DCIS (LoE 1a)
- After BCS, postoperative radiotherapy is recommended (LoE 1a)
- So far, no influence on survival by postoperative radiotherapy can be detected (LoE 1a)
- Young age is an independent risk factor for local recurrence (LoE 1a). Therefore, especially younger patients might benefit from a boost irradiation (LoE 2b)
- As margins are an important prognostic factor for local tumor control, R0-resection should be achieved (LoE 1b)
- So far, no patients’ subset has been identified that not benefit from radiotherapy after BCS in terms of improved local tumor control (LoE 1a)
- Hypofractionated radiotherapy might be as safe and effective as standard RT; wait for results of ongoing RCT.
Ductal Carcinoma in Situ (DCIS) (2/12)

Further information:

Scientific data source screened (for preparation of the current version):

Systematic review of published evidence for 2014-Version:

- PUBMED 2013
- ASCO 2013
- SABCS 2013


No references
Pretherapeutic Assessment in Suspicious Lesions (BIRADS 4) (3/12)

Further information:

Regarding the pretherapeutic assessment of suspicious lesions (BIRADS IV) the stereotactic sore needle or the vacuum biopsy is recommended. If the lesion is completely removed by the biopsy, a marker clip should be left at the biopsy for the exact location of the lesion.

Moreover, clinical examination should be performed.

A further prospective observational study presented that the presence of DCIS significantly affects the accuracy of measuring the sizes of malignant breast tumors when using either B-mode sonography or real time elastography [Soliman et al., 2012].

The actual literature shows concordantly, that MRI is better than mammography for discriminating the exact size of DCIS especially for high grade lesions. On the other hand there is the risk of overestimating benign lesions with the consequence of consecutive interventions. DCIS is not a lethal disease and therefore the cost-risk relations have to be considered carefully. Because of this the AGO recommends +/-.

Regarding early cancer detection, full-field digital mammography has a higher detection rate of low- and intermediate-grade DCIS compared to screen-film mammography [Nederend et al., 2012].

References:


New 2011

D’Orsi C: (2010) “Imaging for the Diagnosis and Management of Ductal Carcinoma In Situ” J Natl Cancer Inst Monogr (41) 214 – 217


New 2013


New 2014

Stehouwer BL, Merckel LG, Verkooijen HM, Peters NH, Mann RM, Duvivier KM, Mali WP, Peeters PH, Veldhuis WB, van den Bosch MA. 3-T breast magnetic resonance imaging in patients with suspicious microcalcifications on


Rajitha Sunkara, Charu Taneja, Darcas Chi, Gail Wolfe, Christine Segal, Allison Keel, Phoebe Olhava, Leslie A. Martin. Role of sentinel lymph node biopsy (SLNB) and preoperative MRI in the management of patients with pure high-grade ductal carcinoma in situ (DCIS). J Clin Oncol 31, 2013 (suppl 26; abstr 87)
Surgical Treatment for Histologically Proven DCIS I (4/12)

Further information

New 2014

Ahmed and Douek published a systematic review and a metaanalysis to evaluate the impact of intra-operative ultrasound (IOUS) in comparison to wire-guided localization (WGL) in non-palpable breast cancers and DCIS. Studies were considered eligible for inclusion in this systematic review if they (1) assessed the role of surgeon-performed IOUS for the treatment of non-palpable breast cancers and ductal carcinoma in situ (DCIS) and (2) specified surgical margin excision status. Those studies, which were randomized controlled trials (RCTs) or cohort studies with comparison WGL groups were included in the meta-analysis. For those studies included in the meta-analysis, pooled odds ratios (ORs) and 95 % confidence intervals (CIs) were estimated using fixed-effects analyses and random-effects analyses in case of statistically significant heterogeneity (p < 0.05).

Eighteen studies reported data on IOUS in 1,328 patients with non-palpable breast cancer and DCIS. Nine cohort studies with control WGL groups and one RCT were included in the meta-analysis. Successful localization rates varied between 95 and 100 % in all studies and there was a statistically significant difference in the rates of involved surgical margins in favour of IOUS with pooled OR 0.52 (95 % CI 0.38-0.71).

The authors concluded that compared with WGL, IOUS reduced involved surgical margin rates in non-palpable lesions as long as they are visible. For invisible DCIS and EIC IUOS can not be recommended.

References:

New 2011

Kumar S, Sacchini V. The Surgical Management of Ductal Carcinoma In Situ. The Breast Journal 2010; 16: S 49-S52

New 2014
**Surgical Treatment for Histologically Proven DCIS II (5/12)**

*Further information:*

Dunne et al. have evaluated the risk of recurrence in dependence of the tumorfree margins. They demonstrated that free margins of 5 mm and more have no significant advantages compared with free margins of at least 2 mm. The clinical recommendation has to be seen in the way that at DCIS tumorfree margins of 2 – 5 mm are enough, while for tumorfree margins of less than 2 mm a re-excision should be recommended.

Planning the surgery it should be recognized that patients who present a palpable mass in case of DCIS have a significantly higher potential for occult invasion (26%), multicentricity and local recurrence.

The indication for SLNE at DCIS should be discussed: there is no question that in case of mastectomy a SLNE should be performed, because a SLNE after mastectomy is not feasible and an axillary dissection had to be done. The recommendation for large DCIS (> 5cm) or DCIS ≥ 2.5 cm with high-grade and/or comedonecrosis is similar.

DCIS in male patients should be treated with mastectomy and SNE.

New data with small patient numbers show that intraoperative evaluation of margins by radiofrequency spectroscopy seems to be promising.

*References:*


New in 2011


Kumar S, Sacchini V. the Surgical Management of Ductal Carcinoma In Situ. The Breast Journal 2010; 16: S49 – S52


New 2013


New 2014


DCIS – Prognostic Factors for the Incidence of Local-/Locoregional Recurrence (6/12)

Further information:

With the help of the Van Nuys Prognostic Index – one of seven scores -, that is based on retrospective data analysis and that grading, tumor size, tumor free margins and age, id was tried to work out standard treatment recommendations. Nevertheless some studies demonstrated high recurrence rates in patients with low risk DCIS possibly based on heterogeneous morphology.

In the EORTC-Study 10853 with 863 patients age (/>40 years), method of diagnosis (mammography, palpable lesion), tumorfree margins (free/not free/ unclear), grading, architecture (clinging/cribriforme and clinging/solide, comedonecrosis) as well therapy (tumorectomy+-radiotherapy) are independent prognostic factors for local and locoregional recurrence in multivariate. The metaanalysis of Wang (2011) demonstrated, that comedonecrosis, focality, tumorfree margins, method of detection, grading and tumor size are independent predictors for local recurrences.

Regarding the age, the Italian Radiation Oncology Group performed a multi-institutional study of conservative treatment of DCIS [Vidali et al., 2012]. The trial was characterized by a very long median follow-up (>11 years). Age was a statistically significant prognostic factor (p=0.0009).

In the years 2010 und 2011 another two scores, that are based on morphological criterias and age, were published. At the moment there are no well evaluated prognostic factors in the area of molecular markers, molecular profiles, DNA methylating processes, a.s.o. Kerlikowske et al. have evaluated a molecular profile by Cox-2+ki67+p16+ and ER-HER2+Ki-67+ expression combined with palpability of the lesions, that was associated with a higher risk for invasive recurrences but not for non invasive recurrences. DCIS-Score from Solin could be helpfull tool in the future.

References:


New 2011

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
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
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
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

New 2013


New 2014


Sarah Patricia Cate, Alyssa Gillego, Manjeet Chadha, John Rescigno, Paul R. Gliedman, Ilana Kats, Susan K. Boolbol. Does the Oncotype DCIS score impact treatment decisions? J Clin Oncol 31, 2013 (suppl 26; abstr 91)


**DCIS Radiotherapy (7/12)**

*Further information:*  
A randomized controlled clinical trial comparing mastectomy alone with local excision by BCS consisting of removal of the DCIS to clear margins (regarding “clear margins” see also editorial by Morrow M, Katz SJ 2012) followed by radiation therapy has not been done. Nevertheless, the available data suggest that long-term survival is similar with both therapeutic approaches providing excellent outcomes.

After mastectomy for pure DCIS the rates of local or regional relapses are very low (<2%) independently of patient’s age (Ho A et al. Breast 2011). Thus, postmastectomy radiotherapy (PMRT) is not recommended. Even with positive or close mastectomy margins, the rates of chest wall recurrences were so low that PMRT is likely not warranted (Chadha M et al. Int J Surg Oncol 2012;2012:423520. doi: 10.1155/2012/423520. Epub 2012 Jun 13; Childs SK, Int J Radiat Oncol Biol Phys 2012 Sep 10. doi:pii: S0360-3016(12)03334-2. 10.1016/j.ijrobp.2012.07.2377. [Epub ahead of print]).

Because of the data of EORTC- and NSABP B-17 studies the radiotherapy of DCIS after BCS has to be seen as standard by reducing the local recurrence rate significantly (Julien JP Lancet 2000; 355: 528-533; Fisher B J Clin Oncol 1998; 16: 441-452; Solin LJ 2012). In small lesions of DCIS with tumor size smaller than 2 cm – 3 cm, tumorfree margins greater than >/= 10 mm and low or intermediate grading and VNPI </= 4 side effects and disadvantages of radiotherapy in relation to risk reduction of local recurrences should be discussed (Schwartz et al. Hum Path 2000).

The data of radiotherapy after BCS in newer studies have confirmed these results. The subgroup of patients who do not benefit from radiotherapy might be very small. A clear subgroup that does not benefit from radiotherapy cannot be defined at the moment (Shaitelman SF et al. 2012). Therefore the interdisciplinar tumor conference is of main importance (Bijker et.al. (EORTC) J.Clin Oncol, 2006).

With respect to retrospective studies nor small tumors nor larger tumor free margins nor a differentiation with histological criterias nor the Van Nuys PI allow to omit the radiotherapy.
Die EBCTCG (2010) has analysed the of 4 randomised studies concerning radiotherapy after BCS for DCIS and could demonstrate that an absolute reduced 10 years risk for recurrences of 15.2% for invasive recurrences with a higher reduction in elder patients independently from other prognostic factors. A prospective study of ECOG (ECOG 5194) without radiotherapy in patients with lesions < 2.5 cm + low-intermediate grade and high grade lesions < 1 cm (RR> 3mm) showed after a FU of 5 years 6.1 % and 15.3% ipsilateral breast events.

Possibly a huge part of recurrences in the low risk group will appear in later times so that the omission of radiotherapy after BCS has to be indicated carefully (Shaitelman SF et al. 2012). The partial breast irradiation for DCIS is experimental at that time; in small groups 5 year recurrence rates of 3.39% are described. Data published in Lancet Oncology 2011 with a FU of 12.7 months demonstrated a reduction of ipsilateral local recurrences after BCS and radiotherapy of 68% for invasive lesions and of 62% of non-invasive lesions (UK-trial). Wapnir et al. published in JNCI 2011 a cumulative 15-years breast cancer mortality after lumpectomy of 3.1%, after BCS and radiotherapy of 4.7% and after BCS and radiotherapy and Tamoxifen of 2.7%. There is no valid data for the use of AI (anastrozole, etc.).

Actual unanswered questions and study endpoints of actual randomized clinical trials regarding the impact of radiation therapy treatment of DCIS are:

1. RT beneficial even for patients with “good risk”-criteria (RT=G 9804; McCormick et al. 2012)?
2. Isoeffectiveness of different fractionation schedules (hypofractionation versus standard fractionation (TROG 07.01; Bonbis-Trial; ANZCTR.org; Azria et al. 2008; Wai et al. 2011; Riou et al. 2012)?
3. Additional benefit by boost irradiation of the tumor bed following BCS and WBI (TROG 07.01; Bonbis-Trial; ANZCTR.org; Azria et al. 2008; Wai et al. 2011; Riou et al. 2012)?
4. Non-inferiority and/or equieffectiveness of whole breast irradiation (WBI) with accelerated partial breast irradiation (APBI) (E5194-Studie, NSABP B-39-trial; National Cancer Institute website. NSABP B-39; Goyal et al. 2011; Jeruss et al. 2011; Park et al. 2011)?
5. Impact of trastuzumab given concurrently with irradiation for patients with HER2+ DCIS resected by lumpectomy (NSABP B-43-trial; Cobleigh MA et al. 2012)?
References:


Schwartz GF, Solin LJ, Olivotto IA, Ernster VL, Pressman PI.


Impact of pathological characteristics on local relapse after breast-conserving therapy: a subgroup analysis of the EORTC boost versus no boost trial.


New 2011

Kane RL, BA Virnig et al. (2010) : “The Impact Surgery, Radiation, and Systemic Treatment on Outcomes in Patients With Ductal Carcinoma In Situ” J Natl Cancer Inst Monogr (41) 130 – 133
EBCTCG Correa C et al. Overview of the randomized trials of radiotherapy in ductal carcinoma in situ of the breast. J Natl Cancer Inst Monogr. 2010 (41); 162 – 77
Punglia RS, Burstein HJ, Weeks JC et al. Radiation Therapy for Ductal Carcinoma In Situ. Cancer 2011; (epub ahead)
New 2013


New 2014


John Paul Einck, Steven E. Finkelstein, Ben Han, Robert Hong, Lydia T. Komarnicky, Robert R. Kuske, Sudha B. Mahalingam, Constantine Mantz, Serban Morcovescu, Stephen S. Nigh, Kerri L. Perry, Jon David Pollock, Jay E. Reiff, Daniel Scanderbeg, Jon F. Strasser, Cathryn M. Yashar, SAVI Collaborative Research Group; Department of Radiation Medicine and Applied Sciences, University of California, San Diego, La Jolla, CA; 21st Century Oncology of Arizona, Translational Research Center, Scottsdale, AZ; South Florida Radiation Oncology, LLC, Boynton Beach, FL; Virginia Hospital Center, Arlington, VA; Drexel University College of Medicine, Philadelphia, PA; Arizona Breast Cancer Specialists, Scottsdale, AZ; The Christ Hospital Cancer Center, Cincinatti, OH; 21st Century Oncology, Translational Research Consortium (TRC), Fort Myers, FL; Texas Oncology, Denton, TX; Northwest Community Hospital Cancer Services, Arlington Heights, IL; Kerri Perry, MD, Denton, TX; Schiffler Cancer Center, Wheeling, WV; Helen F. Graham Cancer Center - Christiana Care Health System, Newark, DE. Accelerated partial-breast irradiation using strut-based brachytherapy in ductal carcinoma in situ patients: A report on 321 patients with median 25-month follow-up. J Clin Oncol

Cochrane Analysis post-operative radiotherapy (8/12)

No further information

No references
**DCIS Postoperative Systemic Treatment (9/12)**

*Further information:*

The NSABP B24-Studie showed a risk reduction of ipsilateral non invasive recurrences of 18% (and contralateral of 78%) and of ipsilateral invasive recurrences of 44% (contralateral of 37%) at a median FU 74 months independently of ER-status (Fisher B Lancet 1999; 353: 1993-2000). This is confirmed by the data of the UK-trial from 2010. In San Antonio 2002 data had been presented that showed a significant reduction of all breast cancer events by 59% in ER-positive non invasive BC, while in ER-negative non invasive breast cancers the recurrence rate was reduced not significantly by 20% (Allred DC Breast Cancer Research and Treatment Vol 76 Suppl 1 Dec 2002: abstract 30). Wapnir et al. published in JNCI 2011 a cumulative 15-years breast cancer mortality after lumpectomy of 3.1%, after BCS and radiotherapy of 4.7% and after BCS and radiotherapy and Tamoxifen of 2.7%. There are no valid datas for the use of AI (anastrozole, etc.). Study participation is recommended.

**New 2013**

Regarding the use of tamoxifen after DCIS, a Cochrane meta-analysis was published in 2012 [Staley et al., 2012]. Two randomized controlled trials were included involving 3375 women. Tamoxifen after surgery for DCIS reduced recurrence of both ipsilateral (same side) DCIS (HR 0.75; 95% CI 0.61 to 0.92) and contralateral (opposite side) DCIS (RR 0.50; 95% CI 0.28 to 0.87). There was a trend towards decreased ipsilateral invasive cancer (HR 0.79; 95% CI 0.62 to 1.01) and reduced contralateral invasive cancer (RR 0.57; 95% CI 0.39 to 0.83). The number needed to treat in order for tamoxifen to have a protective effect against all breast events is 15. No reliable number needed to treat to harm could be calculated. Moreover, it was not clear how patient characteristics (e.g. menopausal status, age and tumour ERstatus) affect or predict response to tamoxifen. There was no evidence of a difference detected in all cause mortality (RR 1.11; 95% CI 0.89 to 1.39).
The impact of trastuzumab given concurrently with radiation therapy (RT) to RT alone for patients with HER2+ DCIS resected by lumpectomy is actually proven in a phase III clinical trial by the NSABP (NSAPB B-43; Cobleigh MA et al. 2012).

New in 2014
The NSABP B-43 trial is fully recruited. 5,645/5.861 had analyzable blocks; only 1,969 (34.9 %) were HER2 positive, lower than previously reported. A total of 1,428 patients have been accrued, 1,137 (79.6 %) of whom have follow-up information. The average follow-up time for the 1,137 patients is 23.3 months. No grade 4 or 5 toxicity has been observed. No trastuzumab-related safety signals have been observed. Other data from this trial will be awaited.

References:


Allred DC Breast Cancer Research and Treatment Vol 76 Suppl 1 Dec 2002: abstract 30


New 2011


Cochrane Analysis Tamoxifen after DCIS (10/12)

No further information

No references
Local Recurrence of DCIS after Tumorectomy w/o Irradiation (11/12)

Further information:

Surveillance of patients with DCIS should be performed similar to patients with invasive breast cancer. Regarding LCIS (LIN III) a retrospective review of 670 screening breast MR studies was performed between January 2003 and September 2008. 220 women with a history of LCIS were integrated [Sung et al., 2012]. The median follow-up of screening was 3 years (0.5-5 years). MR imaging was a useful adjunct modality for screening women with a history of LCIS at a high-risk of developing breast cancer, resulting in a 4.5% incremental cancer detection rate.

The treatment of choice of a locoregional recurrence after BCS and radiotherapy for DCIS is the salvage mastectomy especially on the basis that 50% of the recurrences are invasive and half of them were diagnosed in an unfavourable stage (Silverstein MJ J Clin Oncol 1998; 16:1367-1373). A second BCS is combined with a local recurrence rate of 30% (Fisher B et al. Cancer 1999; 86:429-438). At the moment there only is a low level of evidence for the mastectomy after local recurrence of a DCIS. There are no valid datas whether a second BCS is aequieffective with mastectomy and whether the prognosis of an invasive recurrence is better than the one of primary breast cancer.

References:


**Key Points (12/12)**

*No further information*

**References:**


**New 2013**


**Recommended clinical Trial:**

**IBIS 2**
Adjuvant Tamoxifen Compared With Anastrozole in Treating Postmenopausal Women With Ductal Carcinoma In Situ

http://www.gabg.de/studien/ibis2d.html

**GEC-ESTRO APBI TRIAL**

Interstitial Brachytherapy Alone Versus External Beam Radiation Therapy After Breast Conserving Surgery for Low-Risk Invasive Carcinoma and Low-Risk Ductal Carcinoma in Situ (DCIS) of the Female Breast