Neoadjuvan Tedavi Sonrası RT

Dr. Melis GÜLTEKİN

Hacettepe Üniversitesi Tıp Fakültesi

Radyasyon Onkolojisi Anabilim Dalı

Neoadjuvan Tedavi: Kime?

- **Lokal ileri evre meme Ca (Evre IIB T3 – IIIC)**
  - Rekürrens riski yüksek

- *Uzak metastaz riskini ↓*
- *Tümörü ↓ (downstaging)*
- *MKC olasılığını ↑*
- *Sistemik tedavi etkinliğini erken dönemde değerlendirmek*

Neoadjuvan Tedavi: Kime?

- **Seçilmiş erken evre meme Ca (Evre I-II)**
  - Tm/meme oranı ↑ olduğu için MKC uygun olmayan
  - Tm lokalizasyonu - postop. kozmetik sonuçları suboptimal
  - Üçlü negatif (T1c) ya da HER2+ meme Ca
  - Sınırlı N+ hastalıkta (cN1) aksiller LN'larını ↓

- *Kozmetik sonuçları iyileştirmek*
- *Aksiller cerrahiyi ↓*
- *Postoperatif komplikasyonları ↓ (örn. lenfödem)*

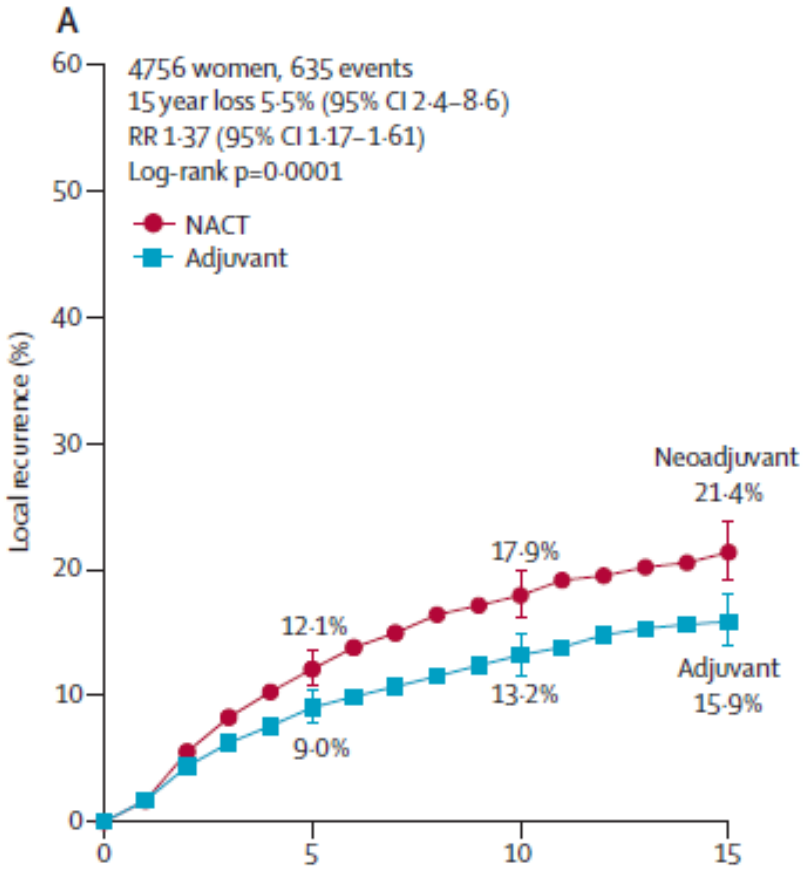
Radyasyon Onkoloğu Gözüyle NAKT…

- **MKC Sonrası RT Endikasyonları**
- **Mastektomi Sonrası RT (PMRT) Endikasyonları**
  - PMRT’den Fayda Görmeyecek Alt Grup Var mı?
- **RT Alanları Ne Olmalı?**
  - Bölgesel nodal ışınlamanın (BNI) rolü

NAKT: MKC Sonrası RT Endikasyonları

Neoadjuvan KT vs. Adjuvan KT

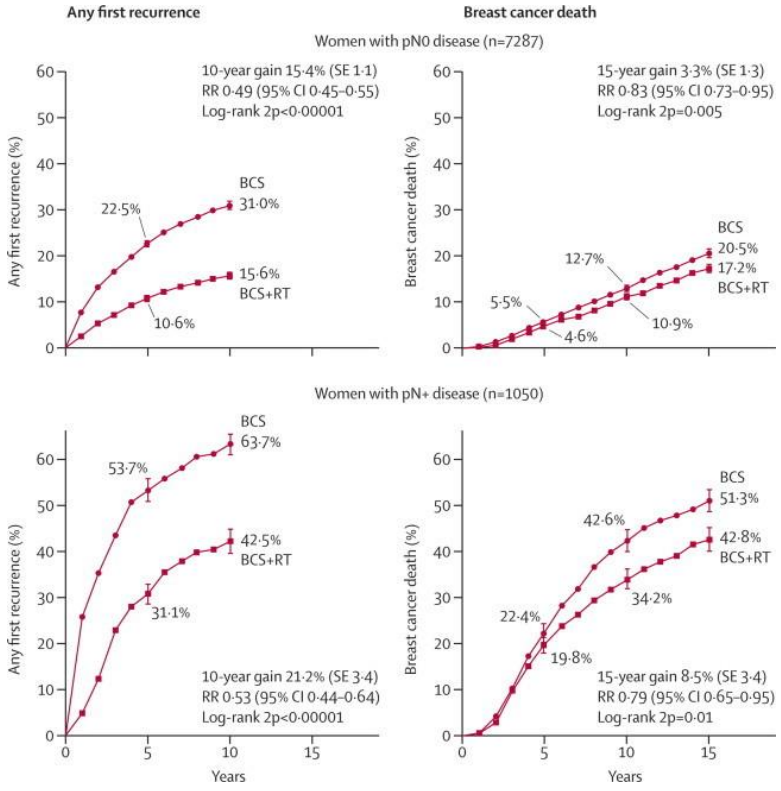
- Erken evre meme Ca (n=4756)
- EBCTCG Metaanalizi
- Neoadjuvant KT:
  - MKC oranı ↑ (%65 vs. %49)
  - **15-y LR ↑** (%21.4 vs. %15.9)
  - 15-y UM fark yok (%38.2 vs. %38)
  - Meme Ca mortalitesi fark yok (%34.4 vs. %33.7)



EBCTCG, Lancet Oncol 2018

NAKT: MKC Sonrası RT Endikasyonları

- Tartışma yok
- Standart ‘’**tüm meme RT** ± Tm Yatağı Boost’’



Effect of radiotherapy after breast-conserving surgery on 10-year recurrence and 15-year breast cancer death: meta-analysis of individual patient data for 10 801 women in 17 randomised trials

*Early Breast Cancer Trialists' Collaborative Group (EBCTCG)**

Lancet 2011; 378: 1707–16

NAKT: PMRT Endikasyonları

NAKT: PMRT Endikasyonları

- Sonuçlanmış faz III randomize çalışma yok
- *MDACC, NSABP, NCDB…*

- LBR riski yüksek olan olgulara önerilir
- **Tartışmalı:**
  - ***Başlangıçtaki klinik evre*** *mi önemli?*
  - ***NAKT yanıtı*** *mı önemli?*

Erken evre, tam yanıt
Erken evre, rezidü hastalık
İleri evre, tam yanıt
İleri evre, rezidü hastalık

Primer Cerrahi Sonrası Kime RT?

- PMRT endikasyonları:
  - **T3-T4**
  - **≥4 LN metastazı**
  - **Fasya-cilt tutulumu**
  - **Cerrahi sınır (+)**

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Int. J. Radiation Oncology Biol. Phys., Vol. 73, No. 4, pp. 997–1002, 2009
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0360-3016/09/$–see front matter

doi:10.1016/j.ijrobp.2008.10.080

REPORT

ACR APPROPRIATENESS CRITERIA® ON POSTMASTECTOMY RADIOTHERAPY

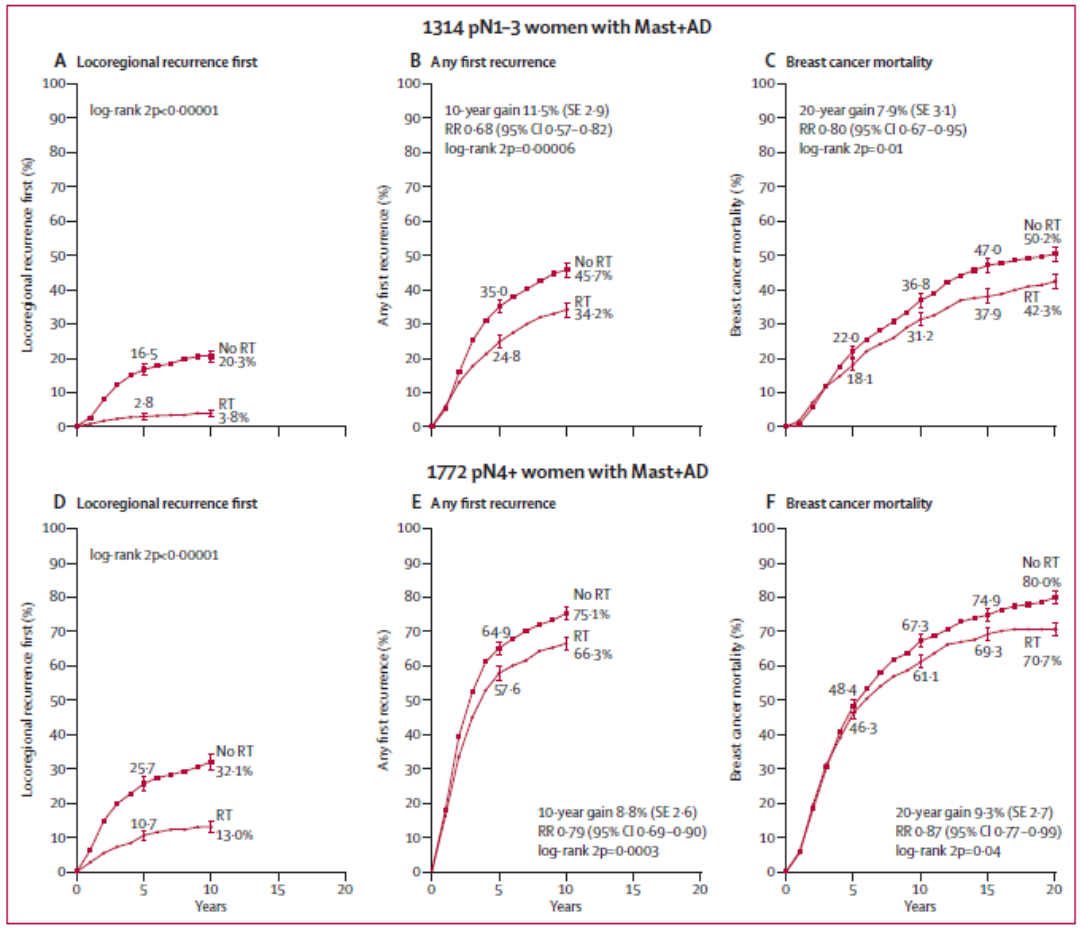
Expert Panel on Radiation Oncology—Breast

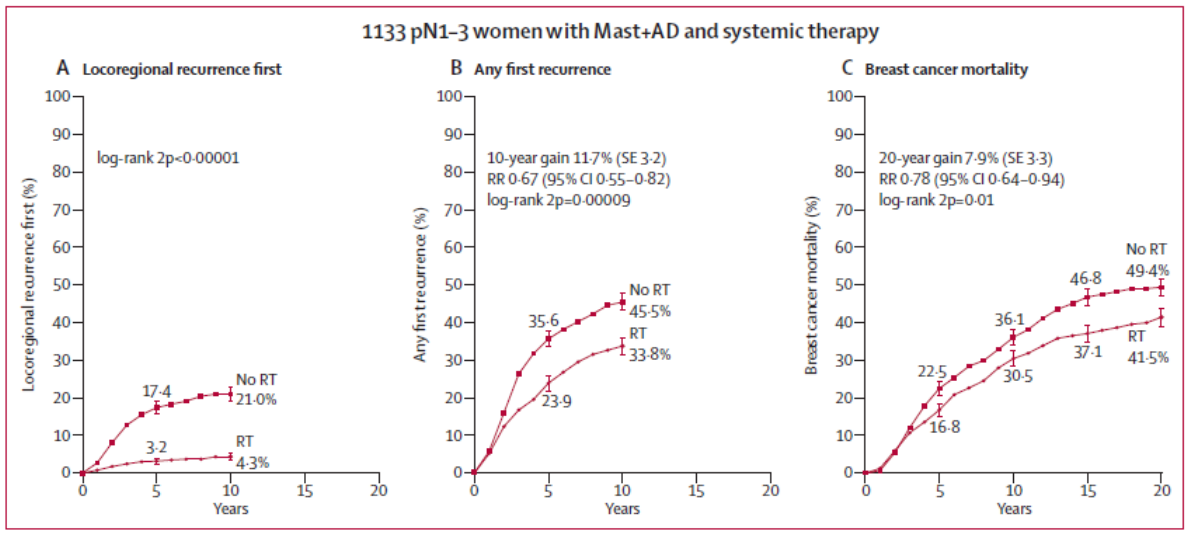
MARIE E. TAYLOR, M.D.,* BRUCE G. HAFFTY, M.D.,† RACHEL RABINOVITCH, M.D.,‡
DOUGLAS W. ARTHUR, M.D.,§ FRANCINE E. HALBERG, M.D.,¶ ERIC A. STROM, M.D.,‖
JULIA R. WHITE, M.D.,** MELODY A. COBLEIGH, M.D.,†† AND STEPHEN B. EDGE, M.D.‡‡

Effect of radiotherapy after mastectomy and axillary surgery on 10-year recurrence and 20-year breast cancer mortality: meta-analysis of individual patient data for 8135 women in 22 randomised trials

*EBCTCG (Early Breast Cancer Trialists' Collaborative Group)**

Lancet 2014; 383: 2127–35





MDACC Deneyimi

- Prospektif çalışmaların retrospektif analizi
- **n=150**
- **NAKT-MRM: RT (-)**

- **%59 cT3-T4, %70 cN(+)**
- Ort. izlem: 4.1yıl
  - **pCR**: %10
  - **pN0**: %41
  - **ORR**: %47

Buchholz TA et al, JCO 2002

MDACC Deneyimi

- 5y ve 10y **LBR**: %27
  - ypT0N0: %19

- **LBR'de etkili faktörler:**
  - **cEvre ≥IIIB**
  - **>2 cm rezidü**
  - **≥4 LN+**
  - **Tmx kullanılmaması**

	Number of patients	5-year locoregional recurrence
AJCC 1988 stage at diagnosis		
IIA	21	5%
IIB	44	16%
IIIA	35	17%
IIIB	38	50%
IV*	11	79%
Clinical tumour stage and pathological nodal status		
T1–2, negative lymph nodes	19	5%
T3–4, negative lymph nodes	23	34%
T1–2, positive lymph nodes	42	13%
T3–4, positive lymph nodes	64	36%
Pathological tumour size and lymph-node status		
<2 cm, negative lymph nodes	21	10%
2·1–5·0 cm, negative lymph nodes	14	49%
>5·0 cm, negative lymph nodes	5	20%
<2 cm, positive lymph nodes	52	20%
2·1–5·0 cm, positive lymph nodes	41	30%
>5·0 cm, positive lymph nodes	9	63%

Adapted from reference 23. AJCC=American Joint Committee on Cancer. *Ipsilateral supraclavicular disease without systemic metastasis.

Table: **Locoregional recurrence among patients from MD Anderson who received neoadjuvant chemotherapy, mastectomy, and no postmastectomy radiation therapy, stratified by clinical and pathological disease characteristics**

Buchholz TA et al, JCO 2002

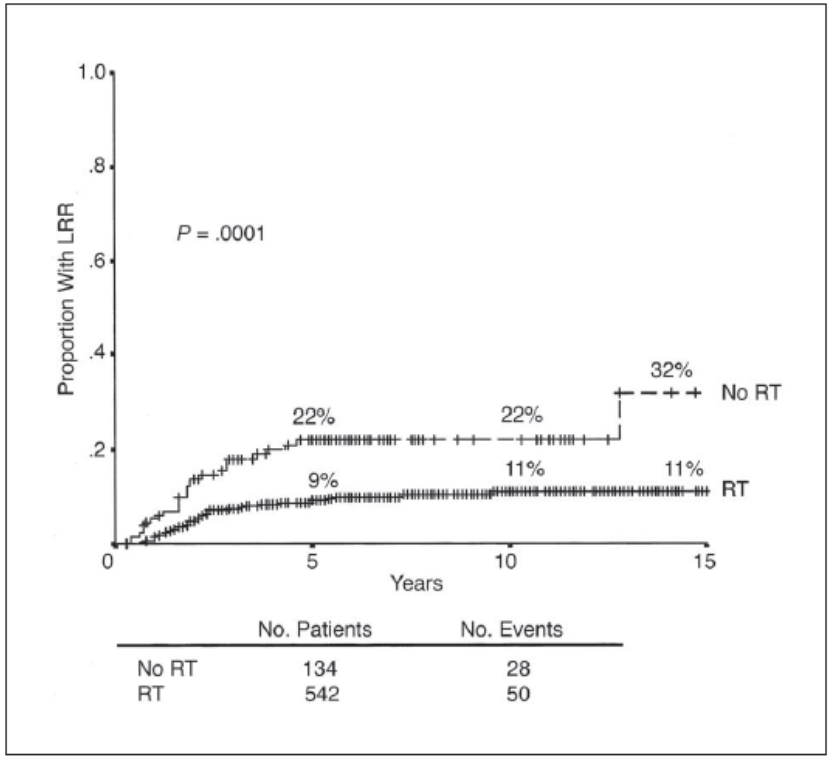
VOLUME 22 · NUMBER 23 · DECEMBER 1 2004
JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

Lale Atahan

Postmastectomy Radiation Improves Local-Regional Control and Survival for Selected Patients With Locally Advanced Breast Cancer Treated With Neoadjuvant Chemotherapy and Mastectomy

Eugene H. Huang, Susan L. Tucker, Eric A. Strom, Marsha D. McNeese, Henry M. Kuerer, Aman U. Buzdar, Vicente Valero, George H. Perkins, Naomi R. Schechter, Kelly K. Hunt, Aysegul A. Sahin, Gabriel N. Hortobagyi, and Thomas A. Buchholz

- MDACC
- 6 prospektif çalışmanın retrospektif analizi
- n=542
- Ort. izlem 69 ay
- **PMRT ile 10-y LBR ↓**



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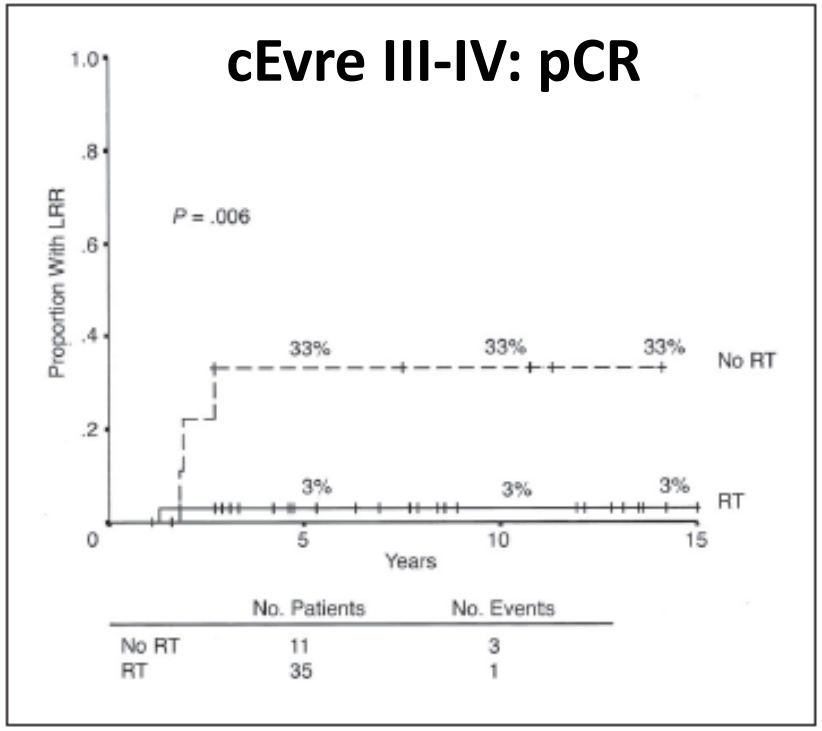
- **PMRT** yararlı:
  - **cT3-4, cN2-3**
  - **≥cEvre IIB**
  - **ypT >2 cm**
  - **ypN ≥4 LN**
  - **cEvre III-IV: pCR**

cEvre III-IV: pCR



PMRT: Fayda Görmeyecek Alt Grup Var mı?

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- **PMRT** katkısı yok:
  - **cEvre I-II, pCR**
  - **cEvre II, yp1-3 LN+**

International Journal of Radiation Oncology biology • physics
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Lale Atahan

Critical Review

Role of Postmastectomy Radiation After Neoadjuvant Chemotherapy in Stage II-III Breast Cancer

Barbara L. Fowble, M.D.,* John P. Einck, M.D.,† Danny N. Kim, B.A.,§ Susan McCloskey, M.D., MSHS.,¶ Jyoti Mayadev, M.D.,‖ Catheryn Yashar, M.D.,† Steven L. Chen, M.D., MBA.,** and E. Shelley Hwang, M.D., MPH†, for the Athena Breast Health Network

- Literatür derlemesi

Sağkalım yararı:

cEvre III, ≥4 LN/LVI

<35 yaş

LBR riski ≤%10: PMRT verilmeyebilir

cEvre II (cT1-2N0-1), pCR

cEvre II (cT1-2N0-1), pN0-1, ER+, >40 y, LVI/ECE (-)

cT3N0 (cEvre IIB), pCR

cEvre IIIA (cT3N1), pCR, >40 y (Yeterli veri yok)

Int J Radiation Oncol Biol Phys, Vol. 83, No. 2, pp. 494–503, 2012

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Int. J. Radiation Oncology Biol. Phys., Vol. 68, No. 4, pp. 1004–1009, 2007
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doi:10.1016/j.ijrobp.2007.01.023

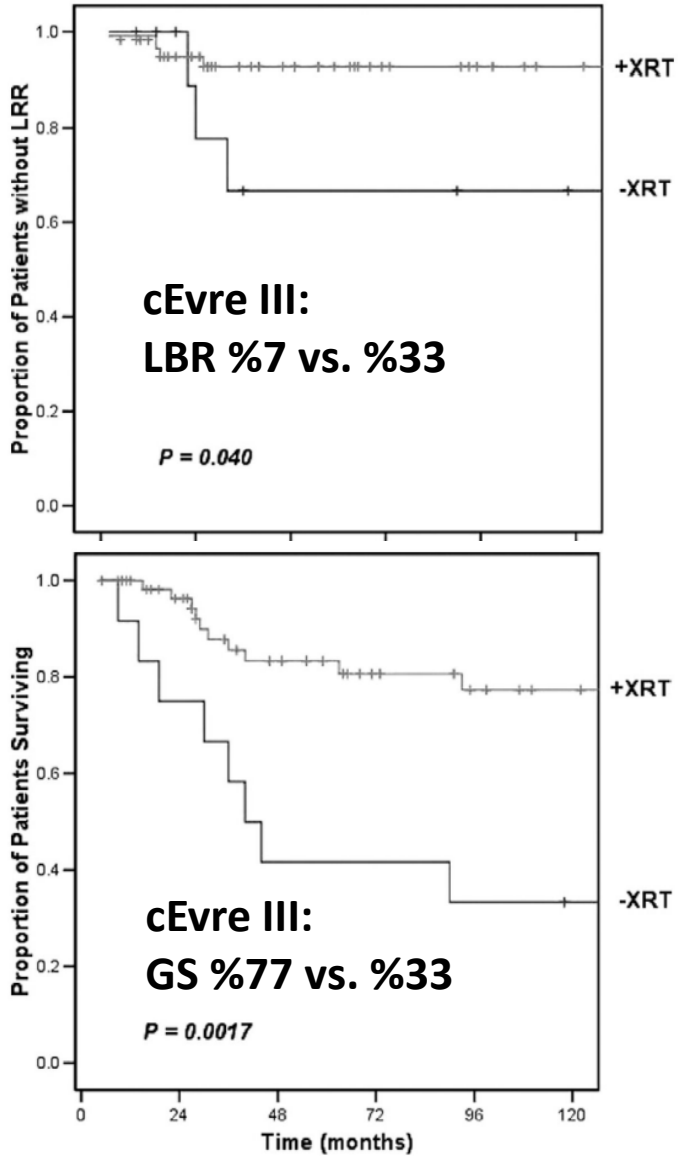
Lale Atahan

CLINICAL INVESTIGATION **Breast**

POSTMASTECTOMY RADIATION IMPROVES THE OUTCOME OF PATIENTS WITH LOCALLY ADVANCED BREAST CANCER WHO ACHIEVE A PATHOLOGIC COMPLETE RESPONSE TO NEOADJUVANT CHEMOTHERAPY

Sean E. McGuire, M.D., Ph.D.,* Ana M. Gonzalez-Angulo, M.D.,† Eugene H. Huang, M.D.,*
Susan L. Tucker, Ph.D.,‡ Shu-Wan C. Kau, Ph.D.,† Tse-Kuan Yu, M.D., Ph.D.,*
Eric A. Strom, M.D.,* Julia L. Oh, M.D.,* Wendy A. Woodward, M.D., Ph.D.,*
Welela Tereffe, M.D.,* Kelly K. Hunt, M.D.,§ Henry M. Kuerer, M.D., Ph.D.,§
Aysegul A. Sahin, M.D.,‖ Gabriel N. Hortobagyi, M.D.,† and Thomas A. Buchholz, M.D.*

- **pCR: PMRT (+)** vs. **(-)**
- Ort. izlem 62 ay
- PMRT ile;
  - **cEvre III** olgularda HS ve GS ↑
  - cEvre I-II olgularda katkısı yok



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0360-3016/$ - see front matter

doi:10.1016/j.ijrobp.2010.12.054

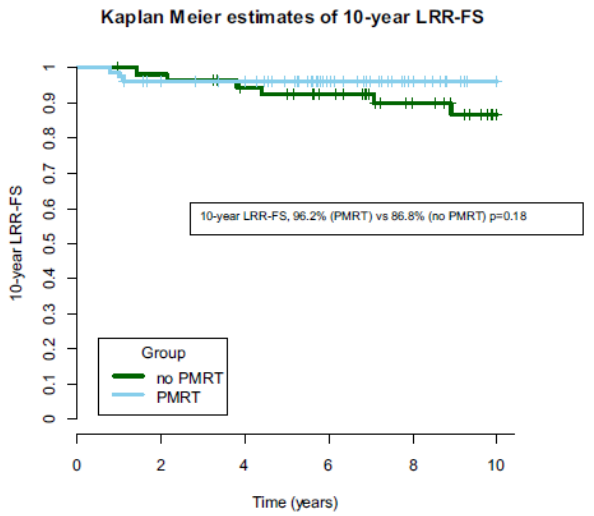
CLINICAL INVESTIGATION **Breast Cancer**

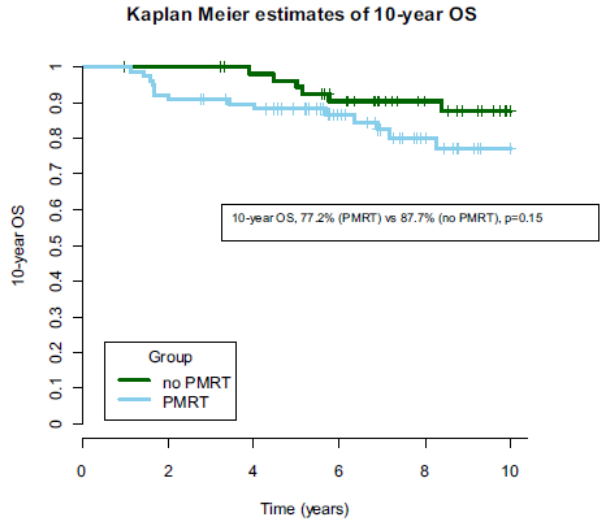
RADIOTHERAPY FOR STAGE II AND STAGE III BREAST CANCER PATIENTS WITH NEGATIVE LYMPH NODES AFTER PREOPERATIVE CHEMOTHERAPY AND MASTECTOMY

Romuald Le Scodan, M.D.,* Jessica Selz, M.D.,* Denise Stevens, M.D.,†
Marc A. Bollet, M.D., Ph.D.,* Brigitte de la Lande, M.D.,* Caroline Daveau, M.D.,*
Florence Lerebours, M.D., Ph.D.,‡ Alain Labib, M.D.,* and Sarah Bruant, M.D.†

Departments of *Radiation Oncology, †Biostatistics, and ‡Medical Oncology, Institut Curie-Hôpital René Huguenin, Saint-Cloud, France

- Evre II-III meme Ca
- **ypN0** (n=134)
- Ort. izlem 91.4 ay
- **PMRT (+)** vs. **(-)**
- LBR ya da GS fark yok





VOLUME 30 · NUMBER 32 · NOVEMBER 10 2012
JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

Lale Tahan

Predictors of Locoregional Recurrence After Neoadjuvant Chemotherapy: Results From Combined Analysis of National Surgical Adjuvant Breast and Bowel Project B-18 and B-27

Eleftherios P. Mamounas, Stewart J. Anderson, James J. Dignam, Harry D. Bear, Thomas B. Julian, Charles E. Geyer Jr, Alphonse Taghian, D. Lawrence Wickerham, and Norman Wolmark

- n=3088
- **cT1-3N0-1**M0
- MKC sonrası TMI/Yalnız Mastektomi
- Ort. izlem 11.75 yıl
- **10-y LBR**:
  - Mastektomi: %12.6
  - MKC+TMI: %10.3

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Table 2. Multivariate Analysis of Independent Predictors of 10-Year LRR in the Combined Data Set*

Variable	HR	95% CI	*P*
Age ≥ 50 *v* < 50 years†	0.78	0.63 to 0.98	.03
Clinical tumor size > 5 *v* ≤ 5 cm†	1.51	1.19 to 1.91	< .001
Clinical nodal status cN(+) *v* cN(−)†	1.61	1.28 to 2.02	< .001
Nodal/breast pathologic status			< .001
ypN(−)/no breast pCR *v* ypN(−)/breast pCR†	1.55	1.01 to 2.39	
ypN(+) *v* ypN(−)/breast pCR†	2.71	1.79 to 4.09	

	LRR (chest wall and regional)	
	Tumor ≤5 cm*	Tumor >5 cm
cN0		
ypN0/breast pCR	6.5%	6.2%
ypN0/no breast pCR	6.3%	11.8%
ypN+	11.2%	14.6%
cN+		
ypN0/breast pCR	0.0%	0.0%
ypN0/no breast pCR	10.8%	9.2%
ypN+	17.0%	22.4%

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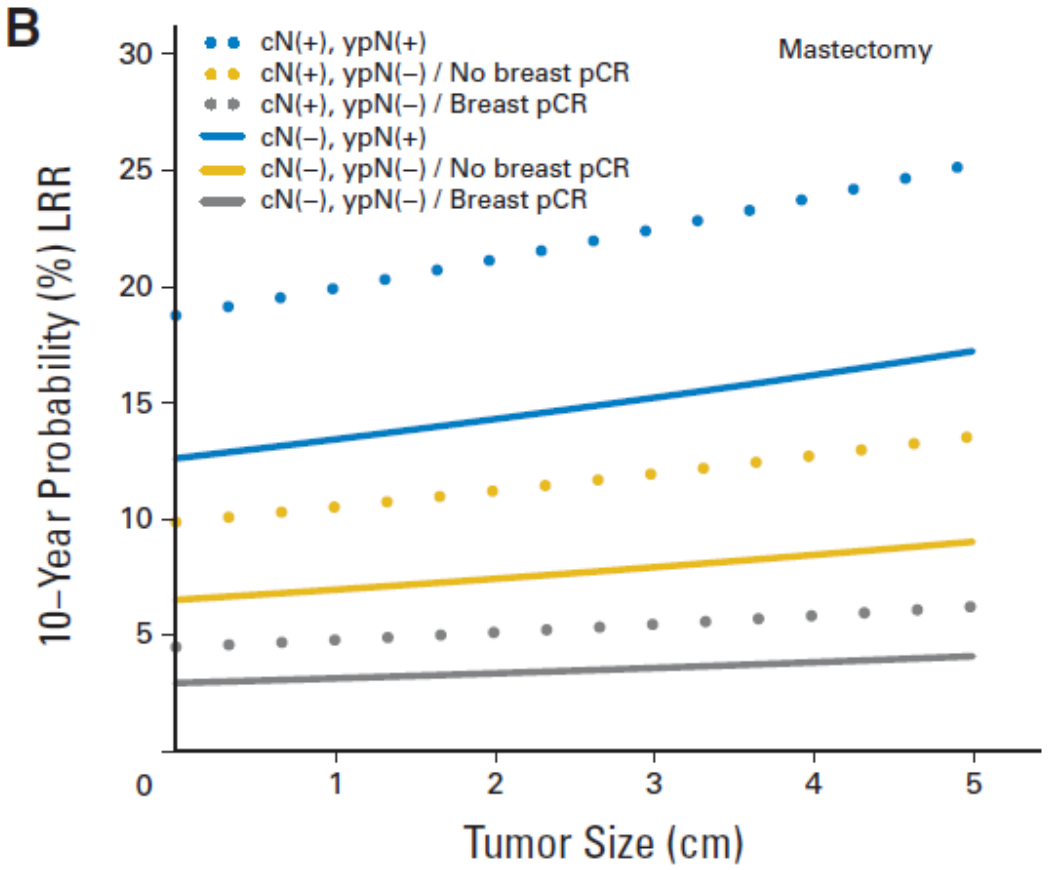
- **PMRT kime?**
- *ypN(+)*
- *ypN0, ypT(+) ve cT3*
- *ypN0, ypT(+) ve cN(+)*



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Clinical Investigation: Breast Cancer

The Role of Postmastectomy Radiation Therapy After Neoadjuvant Chemotherapy in Clinical Stage II-III Breast Cancer Patients With pN0: A Multicenter, Retrospective Study (KROG 12-05)

Su Jung Shim, MD,* Won Park, MD, PhD,† Seung Jae Huh, MD, PhD,† Doo Ho Choi, MD, PhD,† Kyung Hwan Shin, MD, PhD,‡ Nam Kwon Lee, MD, PhD,‡,§ Chang-Ok Suh, MD, PhD,‖ Ki Chang Keum, MD, PhD,‖ Yong Bae Kim, MD, PhD,‖ Seung Do Ahn, MD, PhD,¶ Su Ssan Kim, MD, PhD,¶ Sung W. Ha, MD, PhD,# Eui Kyu Chie, MD, PhD,# Kyubo Kim, MD, PhD,# Hyun Soo Shin, MD, PhD,** Jin Hee Kim, MD, PhD,†† and Hyung-Sik Lee, MD, PhD‡‡

- cEvre II-III: **ypN0**
- Ort. izlem 59 ay
- **PMRT (+)** vs. **(-)**
- 5-y LBRS, HS, GS fark yok

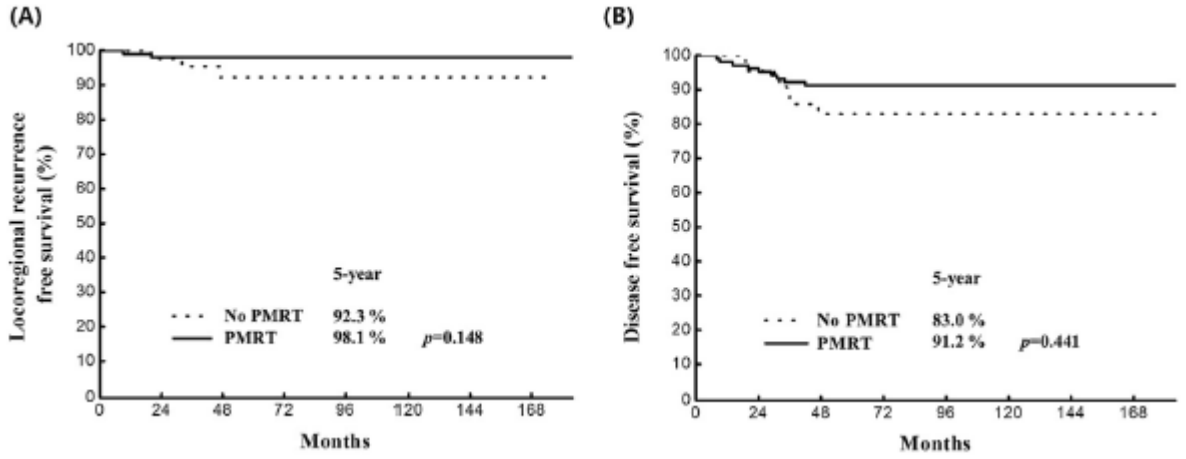

Table 5 Multivariate analysis of LRRFS, DFS, and OS (Cox model)

Variables	LRRFS HR	LRRFS 95% CI	LRRFS *P* value	DFS HR	DFS 95% CI	DFS *P* value	OS HR	OS 95% CI	OS *P* value
Age group ≤ 40 vs >40	0.149	0.230-0.959	.045	0.353	0.135-0.928	.035	0.935	0.246-3.550	.992
Clinical T Stage 1-2 vs 3-4	1.754	0.269-11.418	.557	1.059	0.371-3.019	.915	0.527	0.157-1.768	.299
Clinical N Stage N0 vs N1-N2				1.148	0.291-4.526	.844			
ypT stage 0-is vs 1 vs 2-4	2.294	0.594-8.858	.228	2.223	1.074-4.604	.031	1.775	0.770-4.092	.178
RT No PMRT vs PMRT	0.198	0.290-1.340	.097	0.647	0.236-1.772	.397	0.789	0.231-2.697	.705

Int J Radiation Oncol Biol Phys, Vol. 88, No. 1, pp. 65–72, 2014

Annals of Oncology 27: 818–827, 2016
doi:10.1093/annonc/mdw046
Published online 9 February 2016

The impact of postmastectomy and regional nodal radiation after neoadjuvant chemotherapy for clinically lymph node-positive breast cancer: a National Cancer Database (NCDB) analysis

C. G. Rusthoven[1*], R. A. Rabinovitch[1], B. L. Jones[1], M. Koshy[2,3], A. Amini[1], N. Yeh[1], M. W. Jackson[1] & C. M. Fisher[1]

[1]*Department of Radiation Oncology, The University of Colorado School of Medicine, Aurora; Departments of* [2]*Radiation Oncology;* [3]*Radiation and Cellular Oncology, The University of Chicago School of Medicine, Chicago, USA*

- NCDB (n=15315)
- **cT1–3N1**M0 meme Ca
- NAKT → Mastektomi vs. MKC
- **ypN0** vs. **ypN+**

Annals of Oncology 27: 818–827, 2016
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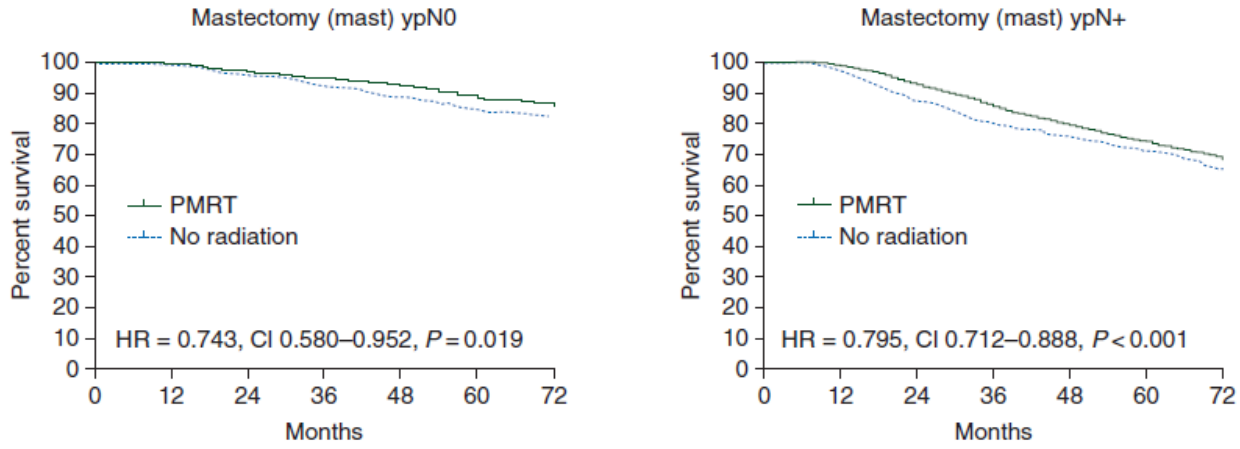
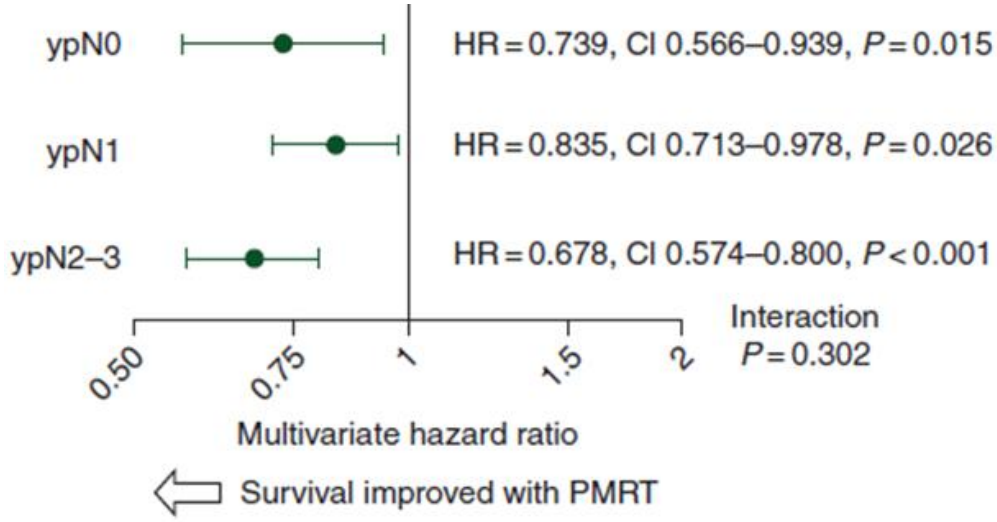
[1]*Department of Radiation Oncology, The University of Colorado School of Medicine, Aurora; Departments of* [2]*Radiation Oncology;* [3]*Radiation and Cellular Oncology, The University of Chicago School of Medicine, Chicago, USA*

- PMRT ile GS↑





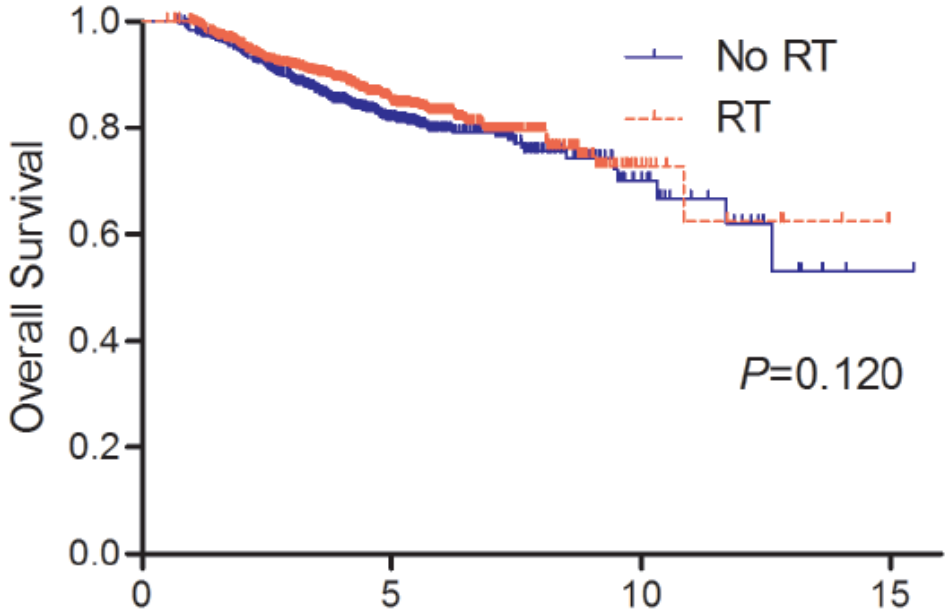
www.impactjournals.com/oncotarget/ Oncotarget, Vol. 7, No. 17

Lale Atahan

The role of postmastectomy radiotherapy in clinically node-positive, stage II-III breast cancer patients with pathological negative nodes after neoadjuvant chemotherapy: an analysis from the NCDB

Jieqiong Liu[1,2,*], Kai Mao[3,4,*], Shuai Jiang[5], Wen Jiang[6], Kai Chen[1,2], Betty Y.S. Kim[7], Qiang Liu[1] and Lisa K. Jacobs[2]

- NCDB (n=1560)
- **cN+ Evre II-III** meme Ca
- NAKT-Mastektomi: **ypN0**
- PMRT (+) vs. (-)
- Ort. izlem 56 ay
- GS fark yok



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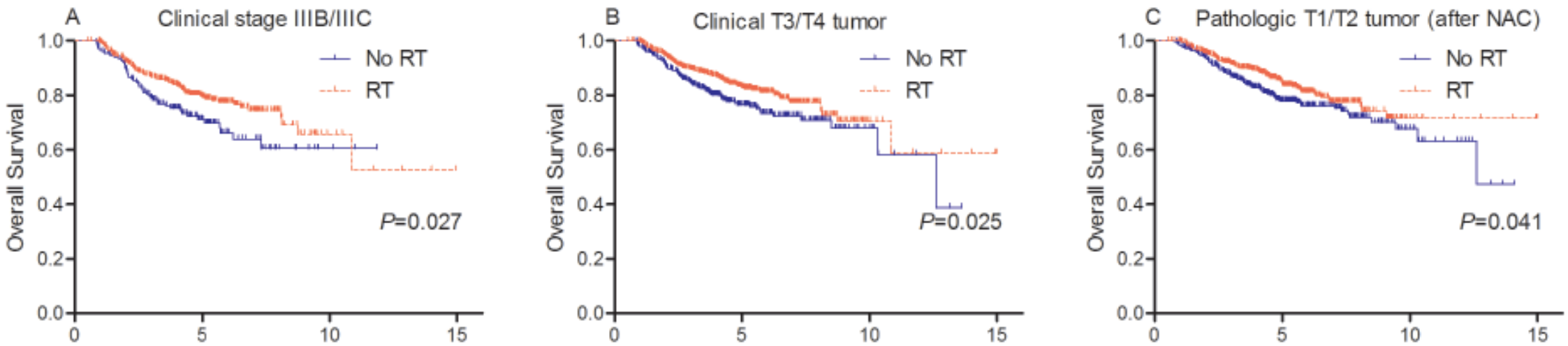

DOI 10.1002/jso.24551

RESEARCH ARTICLE

WILEY Journal of SURGICAL ONCOLOGY

Post-mastectomy radiation therapy and overall survival after neoadjuvant chemotherapy

Olga Kantor MD[1] | Catherine Pesce MD[2] | Puneet Singh MD[1] | Megan Miller MD[1] | Jennifer Tseng MD[1] | Chi-Hsiung Wang PhD[3] | David J. Winchester MD[2] | Katharine Yao MD, FACS[2]

J Surg Oncol. 2017;115:668–676.

- n=8321
- **cN1** (%65.6)-cN2 (%23.3)
- NCDB
- NAKT sonrası PMRT
- Ort. İzlem 69 ay

Lale Atahan

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RESEARCH ARTICLE

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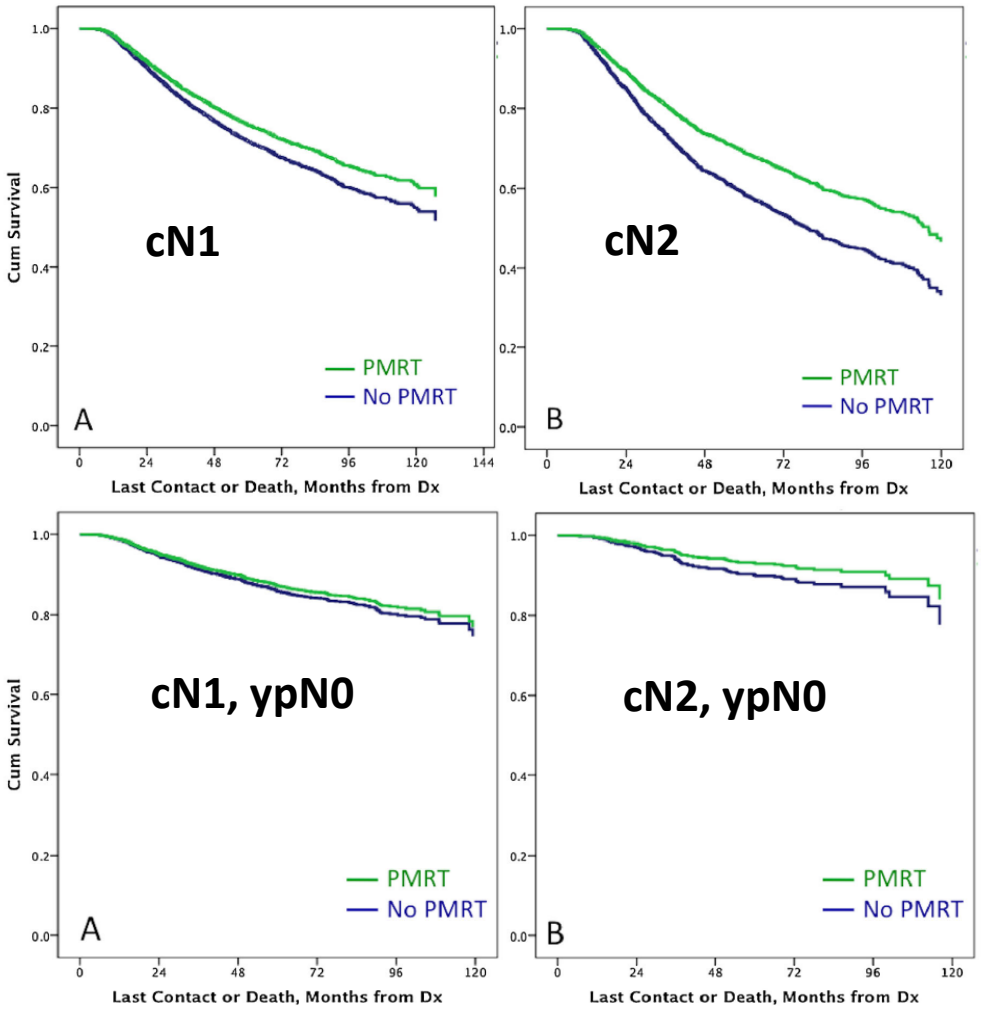
- PMRT ile **GS ↑**
  - **cN1-N2**
  - **cN1-2, ypN0**: GS fark yok
    - **HR (-) ise GS ↑**



Rehber Kılavuzlar

Lale Tatahan

Strahlenther Onkol (2015) 191:623–633
DOI 10.1007/s00066-015-0843-1

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DEGRO practical guidelines for radiotherapy of breast cancer V

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Curr Oncol, Vol. 22, pp. S54-66; doi: http://dx.doi.org/10.3747/co.22.2316

PRACTICE GUIDELINE

Locoregional therapy of locally advanced breast cancer: a clinical practice guideline

M. Brackstone MD, G.G. Fletcher MSc,† I.S. Dayes MD MSc,‡ Y. Madarnas MD,§ S.K. SenGupta MD,|| S. Verma MD,# and Members of the Breast Cancer Disease Site Group***

CURRENT ONCOLOGY—VOLUME 22, SUPPLEMENT 1, MARCH 2015

VOLUME 34 · NUMBER 36 · DECEMBER 20, 2016

JOURNAL OF CLINICAL ONCOLOGY

ASCO SPECIAL ARTICLE

Postmastectomy Radiotherapy: An American Society of Clinical Oncology, American Society for Radiation Oncology, and Society of Surgical Oncology Focused Guideline Update

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NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)

Breast Cancer

Version 1.2018 — March 20, 2018

NCCN.org

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- Lokal ileri evre meme Ca: **PMRT**
  - **NAKT yanıtından bağımsız**
  - **cT3-T4**
  - **cN2-N3**

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- Lokal ileri evre meme Ca: **PMRT**
  - **pCR olsa bile**

Lale Atahan

Questions

1. In female patients with locally advanced breast cancer (LABC) and good response to neoadjuvant chemotherapy (NACT), including endocrine therapy, what is the role of breast-conserving surgery (BCS) compared with mastectomy?
2. In female patients with LABC,
   a. is radiotherapy (RT) indicated for those who have undergone mastectomy?
   b. does locoregional RT, compared with breast or chest wall RT alone, result in a higher survival rate and lower recurrence rates?
   c. is RT indicated for those achieving a pathologic complete response (pCR) to NACT?
3. In female patients with LABC who receive NACT, is the most appropriate axillary staging procedure sentinel lymph node biopsy (SLNB) or axillary dissection? Is SLNB indicated before NACT rather than at the time of surgery?
4. How should female patients with LABC that does not respond to initial NACT be treated?

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- **cEvre I-II** PMRT ne zaman gerekli?
  - *NAKT sonrası **aksiller nodal tutulumu devam eden** olgulara **PMRT** önerilir*

Clinical Question 3

Is PMRT indicated in patients presenting with clinical stage I or II cancers who have received NAST?

Recommendation

Patients with axillary nodal involvement that persists after NAST (eg, less than a complete pathologic response) should receive PMRT. Observational data suggest a low risk of locoregional recurrence for patients who have clinically negative nodes and receive NAST or who have a complete pathologic response in the lymph nodes with NAST. However, there is currently insufficient evidence to recommend whether PMRT should be administered or can be routinely omitted in these groups. The panel recommends entering eligible patients in clinical trials that examine this question (type: informal consensus; evidence quality: low; strength of recommendation: weak).

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- **T1-T2, 1-3 LN+**
  - **PMRT ile LBR, herhangi bir rekürrens ve meme kanserine bağlı ölümler ↓.** Ancak bu gruptaki bazı hastalarda **LBR riski düşüktür.**
  - **Düşük riskli hastalar:**
    - ***>40-45y, T1, LVI (-), 1 LN+ ve/veya küçük LN metastazı, NAKT yanıtı iyi olan ve iyi biyolojik özellikli (HR+, düşük Gr) tm***

- ***Ancak PMRT uygulanmayacak alt grupların tanımlanması için uygun bir riske dayalı model yoktur***

PREOPERATIVE SYSTEMIC THERAPY: ADJUVANT THERAPY

SURGICAL TREATMENT

ADJUVANT TREATMENT

Mastectomy and surgical axillary staging[m] + reconstruction (optional)[q] →

Lumpectomy with surgical axillary staging[m] →

- Complete planned chemotherapy regimen course if not completed preoperatively.
- Consider adjuvant capecitabine in patients with triple-negative breast cancer and residual invasive cancer following standard neoadjuvant treatment with taxane-, alkylator-, and anthracycline-based chemotherapy.

and

- Adjuvant radiation therapy[s] is based on maximal disease stage from prechemotherapy tumor characteristics at diagnosis and post-chemotherapy pathology results.
  - Post mastectomy:[s]
    - Strongly consider radiation to the chest wall + infraclavicular region, supraclavicular area, internal mammary nodes, and any part of the axillary bed at risk for clinical N1, ypN0.
    - For ANY positive axillary nodes after chemotherapy, radiation therapy as indicated to the chest wall + infraclavicular region, supraclavicular area, internal mammary nodes, and any part of the axillary bed at risk.
  - Post lumpectomy:[s]
    - Adjuvant radiation post-lumpectomy is indicated to the whole breast.
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and

- Adjuvant endocrine therapy[bb], if ER-positive and/or PR-positive (category 1)

and

- If HER2-positive, complete up to one year of HER-2 targeted therapy with trastuzumab (category 1) ± pertuzumab. HER2-targeted therapy may be administered concurrently with radiation therapy and with endocrine therapy if indicated.[ff]

→ See Surveillance/ Follow-up (BINV-16)

NAKT: RT Endikasyonları

HAYIR

cEvre I-II:

ypN0

<2 cm rezidü

MUTLAKA

- **MKC sonrası**
- **cT3-T4**
- **cN2-N3**
- **ypN+**

TARTIŞMALI

cEvre I- II:

- **<40y**
- **>2 cm rezidü**
- **Yüksek Gr**
- **Olumsuz pat. faktörler**
  - **TNBC, HR-,HER2+**
- **LVI**
- **Yakın c.sınır**

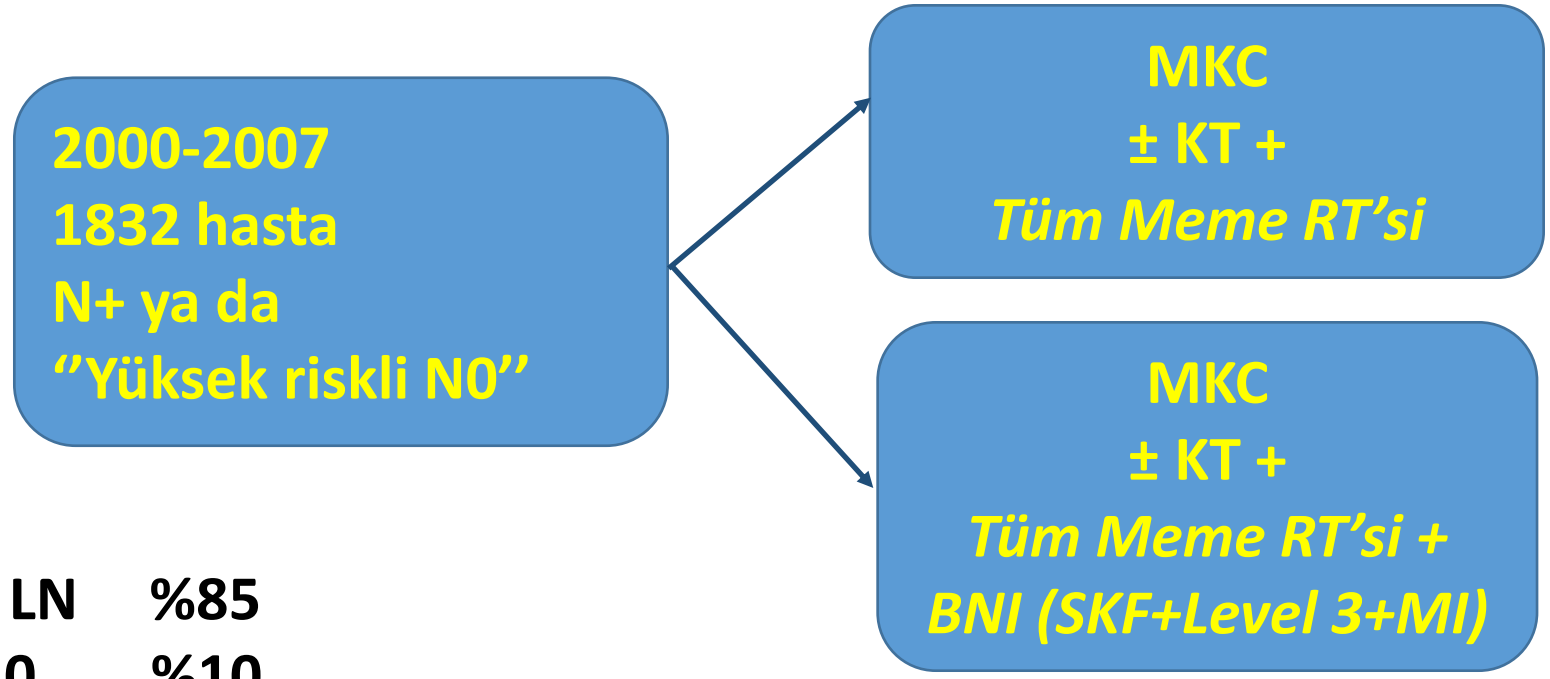
RT Alanları Ne Olmalı?

RT Alanları Ne Olmalı?

- Prospektif randomize çalışma (-)
- Prospektif çalışmaların retrospektif analizi
  - **MDACC: cT3-T4, LN+**
    - **MRM sonrası GD ve lenfatik RT**
  - **NSABP: cT1-T3, N0-N1**
    - **MKC sonrası tüm meme RT**

BNI'nın Rolü

MA. 20 Çalışması



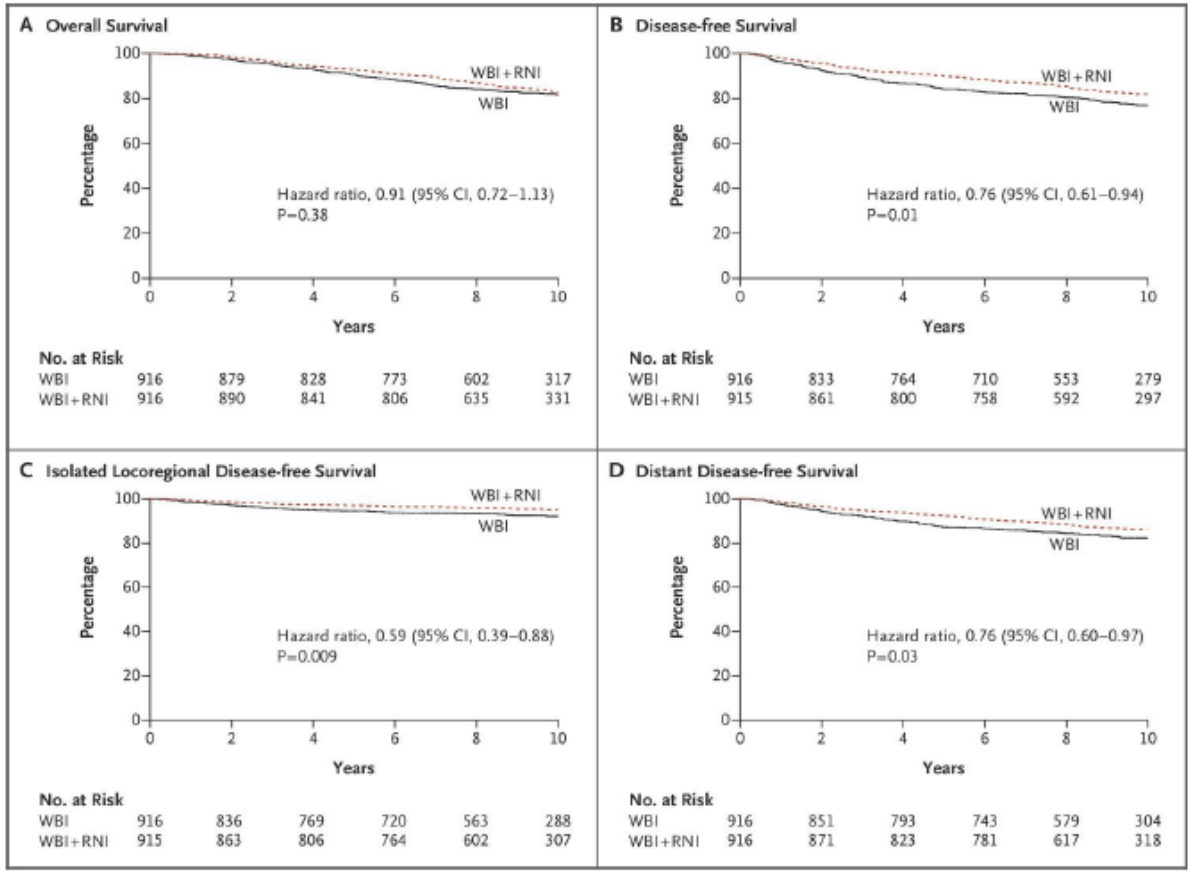
- 1-3+ LN %85
- YR N0 %10
- ≥4+ LN %5
- ER (-) %25
- %91 AC kemoterapisi, %76 HT

Whelan TJ et al, NEJM 2015

BNI'nın Rolü

MA. 20 Çalışması

10 yıllık sonuçlar	TMI	TMI + BNI	p değeri
İzole LBR	%7	%4	**0.009**
HS	%77	%82	**0.01**
LBRS	%92	%95	**0.009**
UMS	%82	%86	**0.03**
GS	%82	%83	0.38



Whelan TJ, et al. NEJM 2015

BNI'nın Rolü

EORTC Çalışması

- Evre I-III meme kanseri (n=4004)
- %95 pT1-T2
- pN+ (%55.6)
- pN- santral/medial tm (%44.5)
- MKC (%76)/Mastektomi (%24)
- %85 sistemik tedavi

Table 1. Baseline Characteristics of the Patients, According to Study Group.*

Characteristic	Control Group (N=2002)	Nodal-Irradiation Group (N=2002)	Total (N=4004)
Age — yr			
Median	54.0	54.0	54.0
Range	22.0–75.0	19.0–75.0	19.0–75.0
Type of surgery — no. (%)			
Mastectomy	479 (23.9)	476 (23.8)	955 (23.9)
Breast-conserving surgery	1523 (76.1)	1526 (76.2)	3049 (76.1)
Pathological tumor stage — no. (%)			
pT1: ≤2 cm	1203 (60.1)	1205 (60.2)	2408 (60.1)
pT2: 2–5 cm	714 (35.7)	716 (35.8)	1430 (35.7)
pT3: >5 cm	71 (3.5)	70 (3.5)	141 (3.5)
Pathological nodal stage — no. (%)			
pN0: no axillary lymph nodes involved	890 (44.5)	888 (44.4)	1778 (44.4)
pN1a: 1–3 axillary lymph nodes involved	866 (43.3)	859 (42.9)	1725 (43.1)
pN2a: 4–9 axillary lymph nodes involved	201 (10.0)	195 (9.7)	396 (9.9)
pN3a: >9 axillary lymph nodes involved	44 (2.2)	59 (2.9)	103 (2.6)
Adjuvant treatment — no. (%)			
None	301 (15.0)	324 (16.2)	625 (15.6)
Chemotherapy	500 (25.0)	494 (24.7)	994 (24.8)
Hormonal therapy	599 (29.9)	586 (29.3)	1185 (29.6)
Both chemotherapy and hormonal therapy	602 (30.1)	598 (29.9)	1200 (30.0)

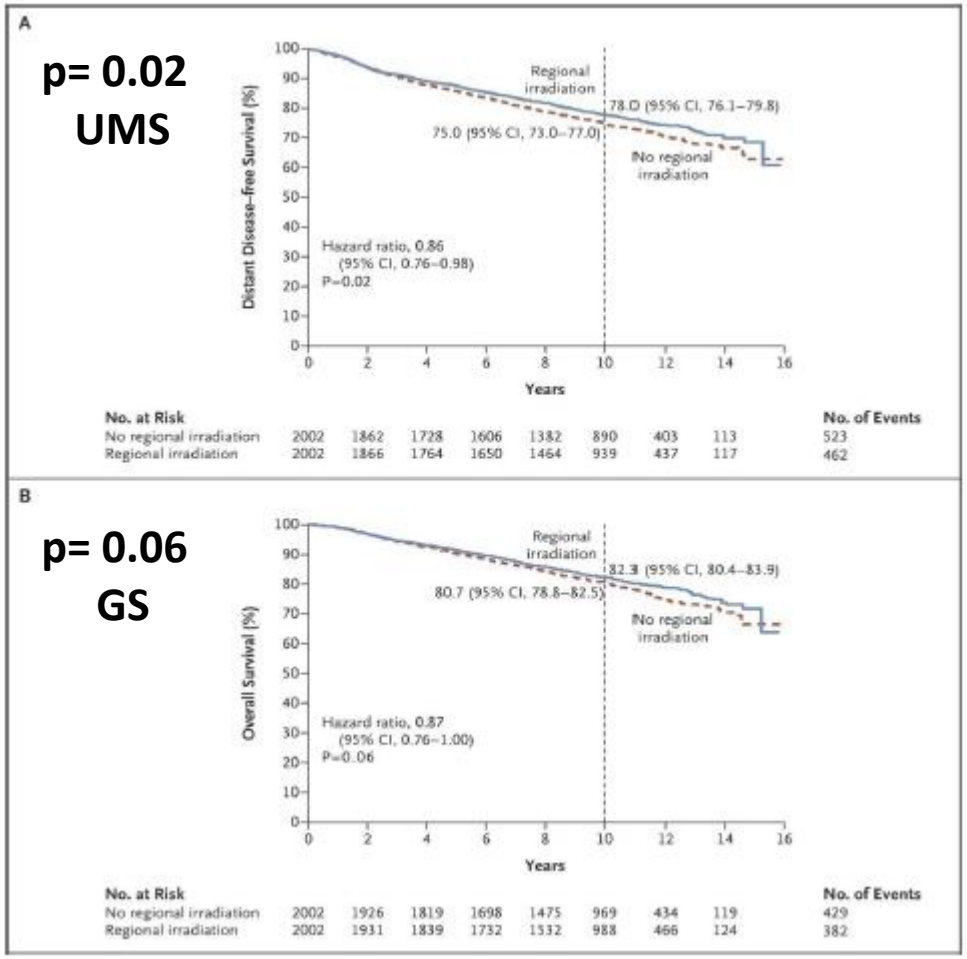
* The control group received whole-breast or thoracic-wall irradiation alone, as compared with the nodal-irradiation group, which received whole-breast or thoracic-wall irradiation in addition to regional nodal irradiation. There were no significant differences between the groups.

Poortmans PM, et al. N Engl J Med 2015

BNI'nın Rolü

EORTC Çalışması

- Randomizasyon
  - Meme/GD RT ± **MI-Med. SKF**
- Ort. 10.9 yıl izlem
- **HS, UMS ↑**, GS için trend
- Meme Ca mortalitesi ↓
  - RR %2.7 vs. 4.2



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- RT:
  - Meme ya da GD
  - SKF, Level 3, MI (anti-HER2 tedavi almayanlara)

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- PMRT'de minimum hedef hacim
  - **GD**
  - **SKF-apeks aksilla**

- Tartışmalı:
  - MI
  - Level I-II aksilla

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Mastectomy and surgical axillary staging[m] + reconstruction (optional)[q] →

Lumpectomy with surgical axillary staging[m] →

→ See Surveillance/ Follow-up (BINV-16)

NAKT: RT Alanları

MKC

Tüm meme

± Tm yatağı

Mastektomi

Göğüs duvarı

Lenfatik:

ypN+ ise *mutlaka* SKF, Level 3, MI

- Yalnız SLNB ise tüm aksilla

cN1, ypN0: BNI *tartışmalı*

Devam Eden Faz III Çalışmalar

Alliance A11202 trial

cT1-3 cN1

NAKT sonrası SLNB: ypN+

cALND + BNI (level 3-SKF) vs. **BNI** (tüm aksilla-SKF)

Hedeflenen hasta sayısı 2918

Hedeflenen hasta sayısı 1636

Cerrahlarımızdan Beklediklerimiz…

Lale Atahan

- **Tanıda hastayı görmüyoruz**
- ***Tanıda aksillanın durumu?***
  - ***FM/USG***
  - ***Şüpheli LN Bx ile konfirme edilmeli***

Lale Atahan

Hocamızı sevgi ve saygı ile anıyoruz…