

Breast-Conserving Therapy in Early Breast Cancer



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Breast Cancer



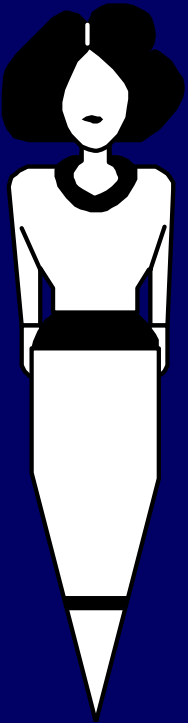
- **Incidence:** 1 050 346 new cases / year ¹
- **Mortality:** 372 969 deaths / year
- **Frequency:** 1 / 8 woman ²

1. WHO, Geneva, Globocan, 2000.

2. Green Lee et al. Ca Cancer J Clin, 2000.

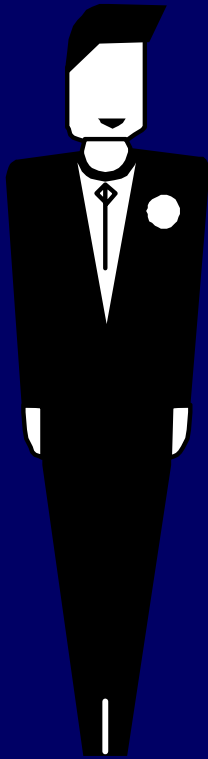
Cancer Statistics, 2000

10 Leading Sites by Gender, US



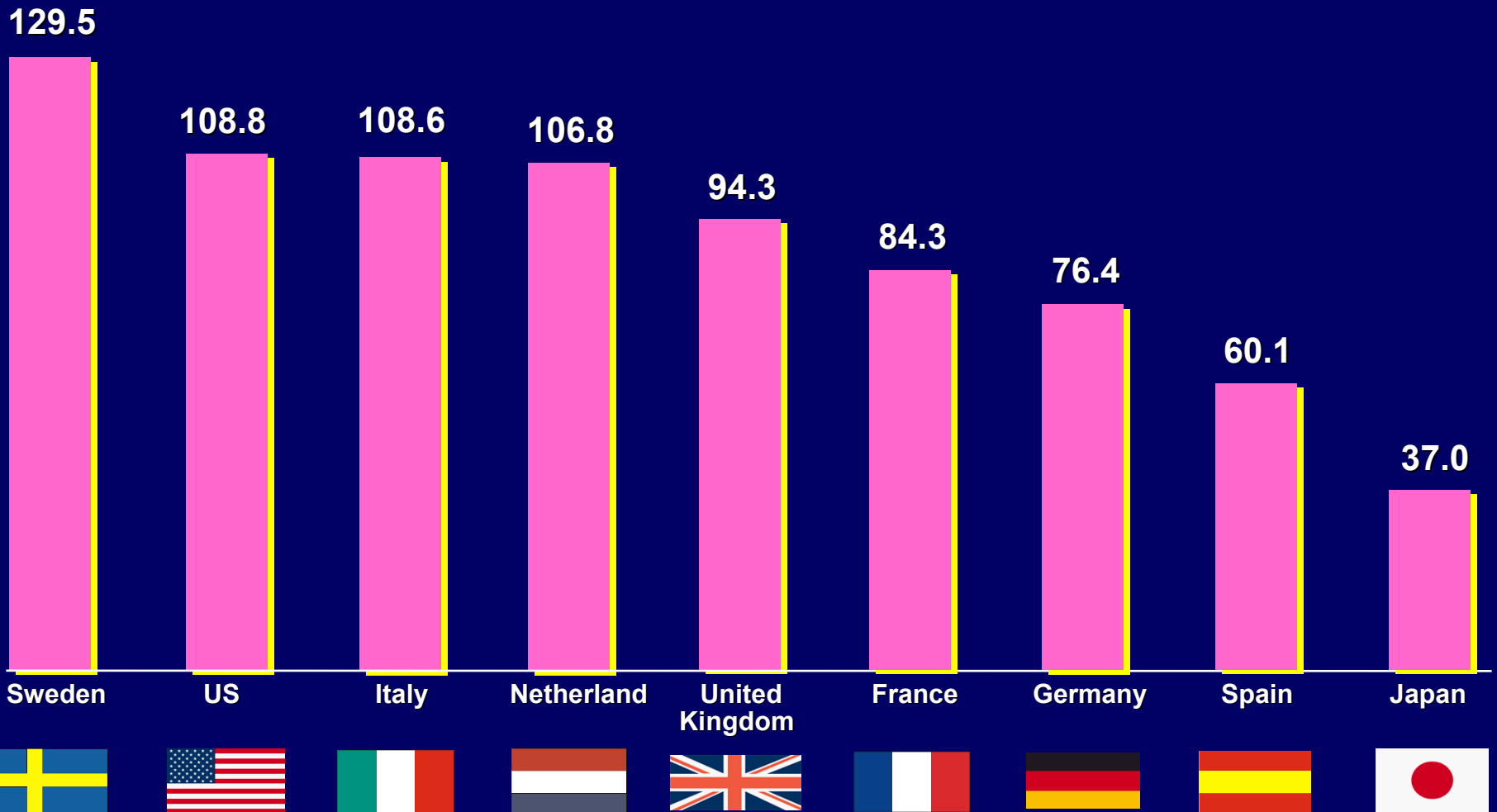
30 % Breast
12 % Lung, bronchus
11 % Colon, rectum
6 % Uterine corpus
4 % Ovary
4 % NH-lymphoma
3 % Melanoma
2 % Urinary bladder
2 % Pancreas
2 % Thyroid
22 % All other sites

29 % Prostate
14 % Lung, bronchus
10 % Colon, rectum
6 % Urinary bladder
5 % NH-lymphoma
4 % Melanoma
3 % Head,neck
3 % Kidney
3 % Leukemia
2 % Pancreas
19 % All other sites



Breast Cancer: Incidence

Incidence rate (per 100,000 women)



International Opportunities in Cancer Management, SRI International, 1994.

Surgical Options for Early Breast Cancer



- **1907: Radical mastectomy (Halsted)**
- **1960: Modified radical mastectomy (Patey)**
- **1970: Breast- Conserving Therapy (BCT)**

Objective



**To review breast- conserving therapy
as a treatment option for early breast cancer**

Methodology



MEDLINE

**Cochrane
Library**

**WHO
Reproductive
Health Library**

Randomized Trials



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graph TD; MEDLINE[MEDLINE] --> RT[Randomized Trials]; Cochrane[Cochrane Library] --> RT; WHO[WHO Reproductive Health Library] --> RT;
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BCT: Definition

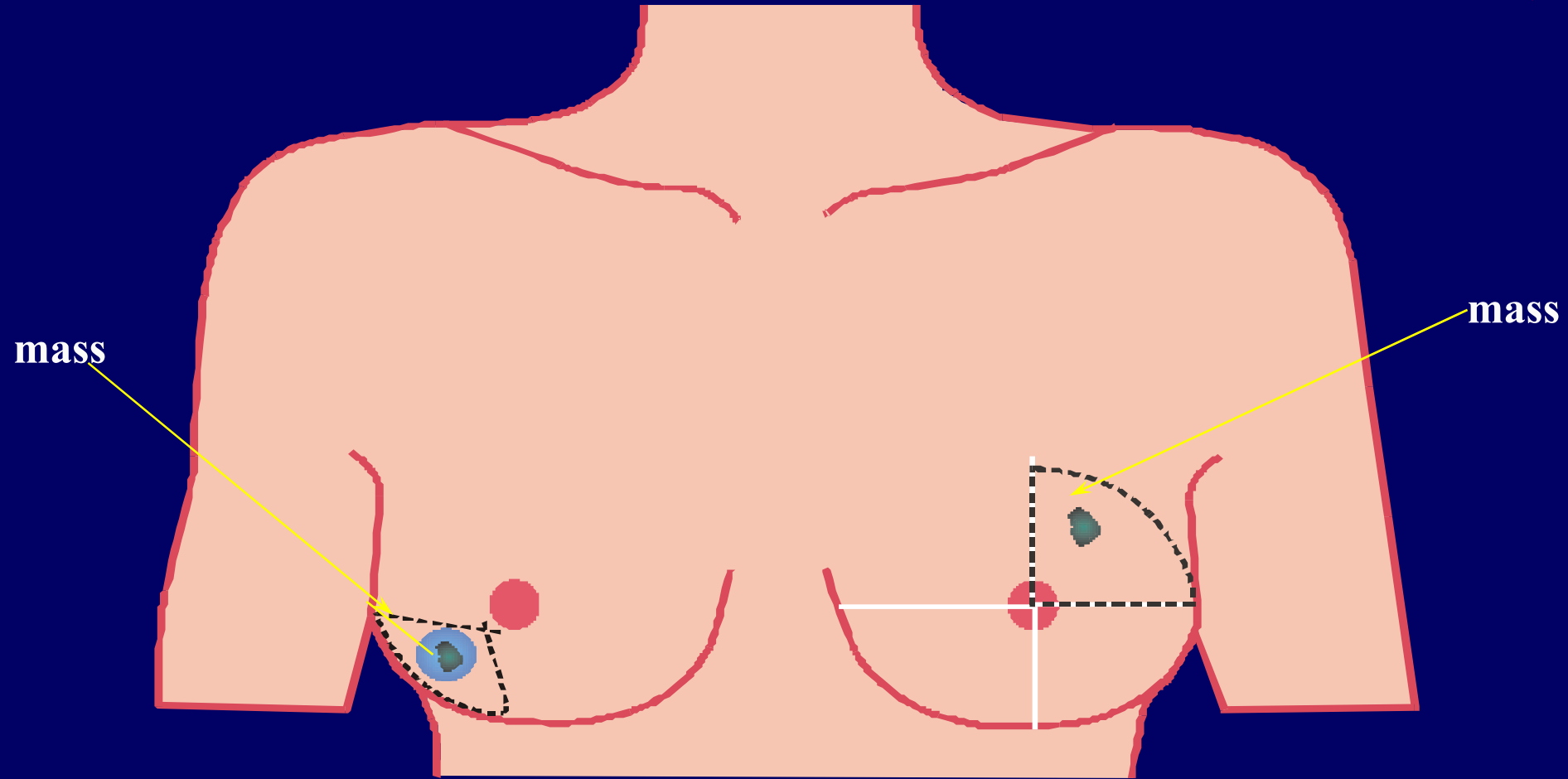


Breast- conserving surgery

+

Radiation therapy

Surgical Technique



mass

mass

 Local excision
 Wide excision


 Quadrantectomy

Lymph Node Status



- **Axillary lymph nodes dissection**
- **Sentinel node biopsy**

Sentinel Node



Study	Year	#Pts	ID rate	Technique	Accuracy	SLN only met
Giuliano	1994	174	66%	Dye	96%	38%
Krag	1996	70	71%	Tc	100%	67%
Albertini	1996	62	92%	Tc + Dye	100%	67%
Giuliano	1997	107	93%	Dye	100%	67%
Borgstein	1997	25	100%	Tc* + Dye	100%	64%
Barnwell	1998	42	90%	Tc + Dye	100%	33%
Veronesi	1997	163	98%	Dye*	98%	40%
Borgstein	1998	104	100%*	Tc	98%	59%
Crossin	1998	50	84%	Tc	98%	
Guenther	1997	145	71%	Dye	97%	43%
Krag	1998	443	91%	Tc	96%	41%

Indication of BCT



- **Stage I**¹ : **T1 N0 M0**²
- **Stage II** :
 - T0 N1 M0**
 - T1 N0 M0**
 - T2 N0 M0**
 - T2 N1 M0**

1. American Joint Committee on Cancer (AJCC), 1997.

2. Union International Contre le Cancer (UIAC), 1994.

Limitations of BCT




- **Absolute**

- **Multicentric**
- **Diffuse calcifications**
- **Positive margins**
- **Prior irradiation**


- **Relative**

- **Tumor / breast ratio**
- **Collagen diseases**
- **Advanced disease**
- **Central tumor**

BCT: Outcome

- 
- **Local recurrence**
 - **Survival**
 - **Cosmetic**
 - **Prognostic factors**

BCT: Local Recurrence



Trial	Period	Follow-up (Years)	Number of patients		Local recurrence	
			Mast	CS/RT	Mast (%)	CS/RT (%)
NCI- Milan	1973-80	18	349	352	4	7
IGR	1972-84	15	91	88	14	9
NSABP B-06	1976-84	12	590	629	8	10
NCI - Bethesda	1979-87	10	116	121	6	19
EORTC	1980-86	8	422	452	14	17
DBCG	1983-89	6	429	430	4	3

- CS/RT, Conservative Surgery and X-ray therapy; DBCG, Danish Breast Cancer Group; eortc, European organization for Research and Treatment of Cancer; IGR, Institut Gustave-Roussy; Mast, Mastectomy; NCI, National Cancer Institute; NSABP, National Surgical Adjuvant Breast and Bowel Project.

BCT : Overall Survival

Trial	Period	Follow-up (Years)	Number of patients		Overall Survival	
			Mast	CS/RT	Mast (%)	CS/RT (%)
NCI- Milan	1973-80	18	349	352	73	65
IGR	1972-84	15	91	88	65	65
NSABP B-06	1976-84	12	590	629	63	59
NCI- Bethesda	1979-87	10	116	121	77	75
EORTC	1980-86	8	422	452	54	61
DBCG	1983-89	6	429	430	82	79

CS/RT, Conservative Surgery and X-ray therapy; DBCG, Danish Breast Cancer Group; eortc, European organization for Research and Treatment of Cancer; IGR, Institut Gustave-Roussy; Mast, Mastectomy; NCI, National Cancer Institute; NSABP, National Surgical Adjuvant Breast and Bowel Project.

Cosmetic : Prognostic Factors



- **Type of surgery**
- **Radiation therapy**

BCT : Prognostic Factors



- **Age**
- **Tumor size**
- **Histology**
- **Margins**
- **Lymph nodes**
- **Radiation therapy**
- **Systemic treatment**

Prognostic Factors : Age



- **Tumor characteristics**
- **Loco- regional recurrence**
- **Survival**

Prognostic Factors : Tumor Size



		Local recurrence rate		
Trial	Follow-Up (Years)	Tumor Size (cm)	Mast (%)	CS/RT (%)
NCI - Milan	18	2	4	7
IGR	15	2	14	9
NSABP B-06	12	4	8	10
NCI - Bethesda	10	5	6	19
EORTC	8	5	14	17
DBCG	6	5	4	3

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Prognostic Factors : Histology



- **Extensive Intraductal Component (EIC)**
- **Lobular carcinoma**
- **Grade**
- **Margins**

Prognostic Factors : Type of Surgery



Local recurrence

Mastectomy < Quadrantectomy < Lumpectomy¹

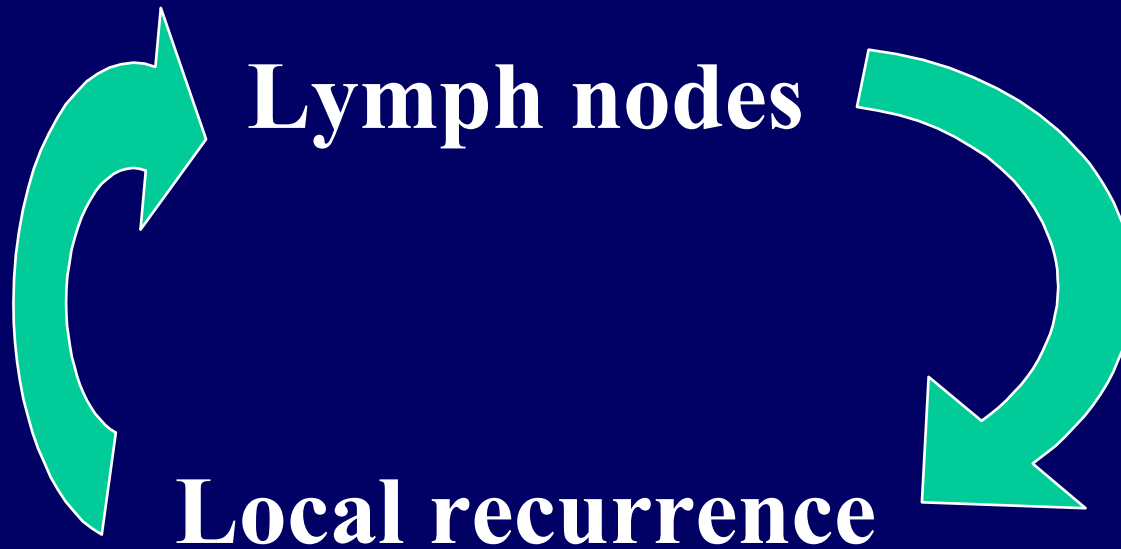
3 - 4%

5%


10%



Prognostic Factors : Lymph Nodes



Prognostic Factors : Radiation Therapy



Trial	Median follow-up (Months)	Local recurrence		Survival	
		CS (%)	CS + RT (%)	CS (%)	CS + RT (%)
NSABP B-06	144	38	12	58	62
NCI-Milan III	52	18	2	—	—
Swedish	64	18	2	90	91
Antorio	91	35	11	76	79

CS, Conservative Surgery; CS/RT, Conservative Surgery and Radiation therapy; NCI, National Cancer Institute; NSABP, National Surgical Adjuvant Breast and Bowel Project.

Prognostic Factors : Sytemic Treatment

- **Chemotherapy**

 **Survival Benefit**

- **Hormonal Treatment**

Conclusion

- **Breast- Conserving Therapy is a safe procedure**

Conclusion

Breast- Conserving Therapy provides

- **Good Locoregional Control**
- **Distant Survival = Mastectomy**
- **Good Cosmetic Results**
- **Better Quality of Life**

Recommendations

- **Screening**
- **Follow-up**