



# IOCN

Institutul Oncologic  
"Prof. Dr. Ion Chiricuța"  
Cluj-Napoca

*Împreună redăm speranța!*

Membru al Organizației Institutelor Europene de Cancer "OECl"

# Ganglionul santinela in Cancerul Mamar

Dr. Gabriel Lazar

# Istoric



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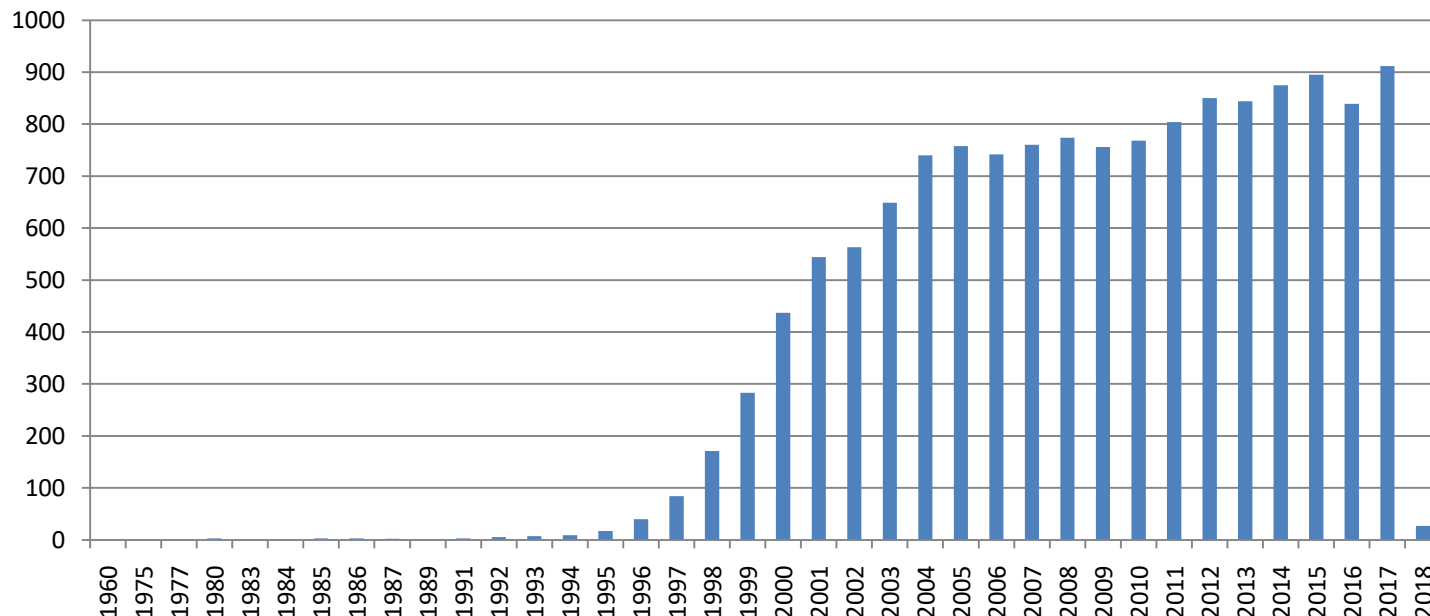
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- 1992 Morton – tehnica GS in melanom
- 1994 Giuliani – tehnica GS in cc mamar

## cautare PubMed





## Justificare

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- Meta ggl. - ↓ OS cu 28%-40%
- LA pt cN<sub>0</sub> → pN<sub>0</sub> = 70%-80%
- Trialul NSABP B-04
  - Chirurgie/RT vs urmarire pt. cN0 nu afecteaza OS
- Fara LA = lipsa statusului ggl.

# Confirmare



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Trial/author	Year	SLN identification (%)	Sensitivity (%)	False negativity (%)
Veronesi et al. [24]	2003	98.5	91.2	8.8
ALMANAC [25]	2006	98.0	93.3	6.7
Sentinella-GIVOM [26]	2008	95.0	83.3	16.7
SNAC [27]	2009	94.0	94.5	5.5
Canavese et al. [29]	2008	98.6	77.1	9.1
NSABP B-32 [28]	2007	97.3	90.2	9.8

Trial/author	Axillary recurrences (%)	Disease-free survival (%)	Overall survival (%)
Veronesi et al. [33]	0 vs. 0.01	88.8 vs. 89.9 (10 yr)*	89.7 vs. 93.5 (10 yr)†
ALMANAC [25]	0.84 vs. 0.2 (1 yr)	NR	NR
Sentinella-GIVOM [30]	0.05 vs. 0.01	89.9 vs. 87.6	95.5 vs. 94.8
Canavese et al. [29]	0.87 vs. 0.0	89.8 vs. 94.5‡	97.2 vs. 97.2§
NSABP B-32 [34]	0.1 vs. 0.3	82.4 vs. 81.5 (8 yr)	91.8 vs. 90.3 (8 yr)

ALND = axillary lymph node dissection; SLNB = sentinel lymph node biopsy; NR = not reported.

\* $p=0.52$ ; † $p=0.15$ ; ‡ $p=0.715$ ; § $p=0.697$ .

# Aspectele tehnicii

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- Curba de invatare
- Tehnica
  - cartografierea
    - trasorul utilizat
    - locul de injectare
    - disectia
- Examinarea GS
- Interpretarea rezultatelor



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# Curba de invatare



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## **ANNALS OF SURGERY** A Monthly Review of Surgical Science Since 1885

Ann Surg. 2001 Sep; 234(3): 292–300.

PMCID: PMC1422020

### **Defining the Optimal Surgeon Experience for Breast Cancer Sentinel Lymph Node Biopsy: A Model for Implementation of New Surgical Techniques**

Kelly M. McMasters, MD, PhD,\* Sandra L. Wong, MD,\* Celia Chao, MD,\* Claudine Woo, MPH,† Todd M. Tuttle, MD,‡ R. Dirk Noyes, MD,§ David J. Carlson, MD,|| Alison L. Laidley, MD,¶ Terre Q. McGlothlin, MD,¶ Philip B. Ley, MD,# C. Matthew Brown, MD,\*\* Rebecca L. Glaser, MD,†† Robert E. Pennington, MD,‡‡ Peter S. Turk, MD,§§ Diana Simpson, RN,\* and Michael J. Edwards, MD,\* and for the University of Louisville Breast Cancer Study Group

- minim 20 de interventii

# Curba de invatare



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[Annals of Surgical Oncology](#)

March 2004, Volume 11, [Supplement 3](#), pp 211S-215S | [Cite as](#)

## The learning curve in sentinel node biopsy: The ALMANAC experience

[Authors](#)

[Authors and affiliations](#)

Dayalan Clarke, Robert G. Newcombe, Robert E. Mansel 

Pt. a implementa  
tehnica

Rata de identificare > 90%  
FN < 5%

→ Dupa ~ 40 de interventi

# Tehnica de cartografiere

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- Cartografiere preoperatorie = Limfoscintigrafie
- Cartografiere intraoperatorie = colorant
- Combinate
  - $Tc^{99m}$  -nanocoloidal (-sulfcoloidal, -albumina)
  - albastru de metilen 1% (isosulfan blue, patent blue vidal)

## Intraoperator

Injectare colorant }  
Gamma probe } → ghidarea disectiei



# Tehnica de cartografiere

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- **Krag D, Weaver D, Ashikaga T, et.al.:** The sentinel lymph node in breast cancer- a multicenter validation study. **NEJM 1998** ;339:941-946.
  - 99m-technetium-labelled sulfur colloid – rata de identificare (RI) = 82%
- **Giuliano AE, Kirgan DM, Guenther JM, et.al.:** Lymphatic mapping and sentinel lymphadenectomy for breast cancer. **Ann Surg 1994**;220:391-398.
  - Lymphazurin blue dye – RI = 66%
- **Albertini JJ, Lyman GH, Cox C, Reintgen DS.:** Lymphatic mapping and sentinel lymph node biopsy in the patient with breast cancer. **JAMA 1996**; 276: 1818-1822
  - Combinarea metodelor – RI = 92%

# Tehnica de cartografiere

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- **Kim T**, Giuliano AE, Lyman GH. Lymphatic mapping and sentinel lymph node biopsy in earlystage breast carcinoma: a metaanalysis. **Cancer 2006**;106:4-16.
  - 69 studii cu > 8000 pacienti
  - Colorant : RI=83.1%; FN=10.9%
  - Radioizotop: RI= 89.2%; FN=8.8%
  - Combinat: RI=91.9%; FN=7%
- **O'Reilly EA**, Prichard RS, Azawi DA, et. al.: The Value of Isosulfan Blue Dye in Addition to Isotope Scanning in the Identification of the Sentinel Lymph Node in Breast Cancer Patients with a positive Lymphoscintigraphy. A Randomized Controlled Trial (I; 127 :SRCTN 98849733). **Ann Surg 2015**,262:243-248.
  - Radioizotop vs Radioizotop+colorant
  - Este similara rata de detectie si de GS pozitivi (23.8% vs 22.1%, p = 0.64).

- Scopul tehnicilor viitoare = **Inlocuirea radioizotopului**

- Logistica

- Preturi

- Tehnica

→ limitarea accesului la tehnica

- **Ahmed M**, Purushotham AD, Douek M. Novel techniques for sentinel lymph node biopsy in breast cancer: a systematic review. **Lancet Oncol.** 2014 Jul;15(8):e351-62. doi: 10.1016/S1470-2045(13)70590-4.
  - Efectuarea limfoscintigrafiei = limitarea accesului la tehnica pt doar 60% dintre pacienti (tarile dezvoltate)
  - ICG, eco microbuble, superparamagnetic nanoparticule cu oxid de fier

# Tehnica de cartografiere

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- Perspective = ICG
  - Rata de detectie similara
- **Stoffels I, Dissemond J, Pöppel T, Schadendorf D, Klode J.** Intraoperative Fluorescence Imaging for Sentinel Lymph Node Detection. Prospective Clinical Trial to Compare the Usefulness of Indocyanine Green vs. Technetium Tc99m for Identification of Sentinel Lymph Nodes. **JAMA Surg 2015;150:617-623.**
  - Identificare la utilizarea ICG
    - inainte de incizia pielii = 21%
    - dupa incizie = 96%

# Tehnica de cartografiere

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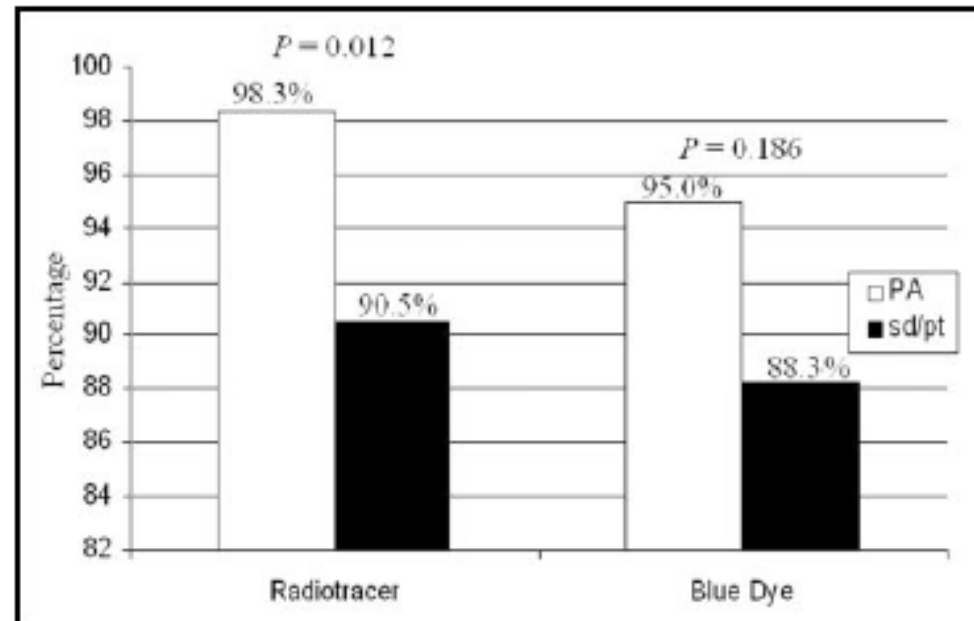
- Locul de injectare
  - **Subareolar**
  - Peritumoral
  - Intradermic/subdermic supratumoral
  - Intratumoral

# Tehnica de cartografiere

- **Pelosi E**, Bello M Giors M et.al.: Sentinel lymph node detection in patients with early stage breast cancer: comparison of periareolar and subdermal/peritumoral injection techniques. **J Nucl Med** 2004;45:220-225.

## Injectarea periareolara/subareolara

- RI mare
- Evita manopere suplimentare
- Evita "orbirea"



# Tehnica de cartografiere

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- Drenajul extra-axilar
  - 10% extra-axilar (MI, scl, lc)

**Caudle A**, Kuerer H, Le-Petross H, Yang W, Yi M. Predicting the Extent of Nodal Disease in Early- Stage Breast Cancer. **Ann Surg Oncol 2014**, 21:3440-3447.

- 3685 pacienti → 20,5% drenaj MI
- 81% biopsii MI → 21,3% cu meta. (3,5% din total)
- Meta. MI corelata cu cea axilara ( $p < 0.001$ )
- Semnificatie prognostica = Meta. MI fara meta. Axilara

**! relevanta clinica**



# Examinarea GS

- Ex. Extemporaneu

- Pro:
  - Dg. HP care indica limfadenectomia (!!?)
- Contra
  - Poate omite micrometastazele
  - Consuma material
- Protocol IOCN = ggl. suspecti peste 1,5 cm!!?

(inainte Z0011)

- Ex. Parafina = 3 sectiuni → 6 fete

- IHC



## Examinarea GS

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Micrometastaze (MM) = 0,2 – 2 mm

Celule izolate (CI) = < 0.2 mm

- trialul MIRROR - prog. pN0 > pN1mic (MM,CI)  
(recidiva la 5 ani: 1.2 vs. 6.2%)
- trialul ACOSOG Z0010, NSABP-32
  - 10%-15% MM+CI fara sa influenteze prog.



# Interpretarea rezultatelor

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GS pozitiv ↔ **tratament** ↔ GS negativ

→ Trialurile ACOSOG Z0011 si IBSCG 23-01  
-DFS similar pt LA sau doar BGS

# Tratamentul regional



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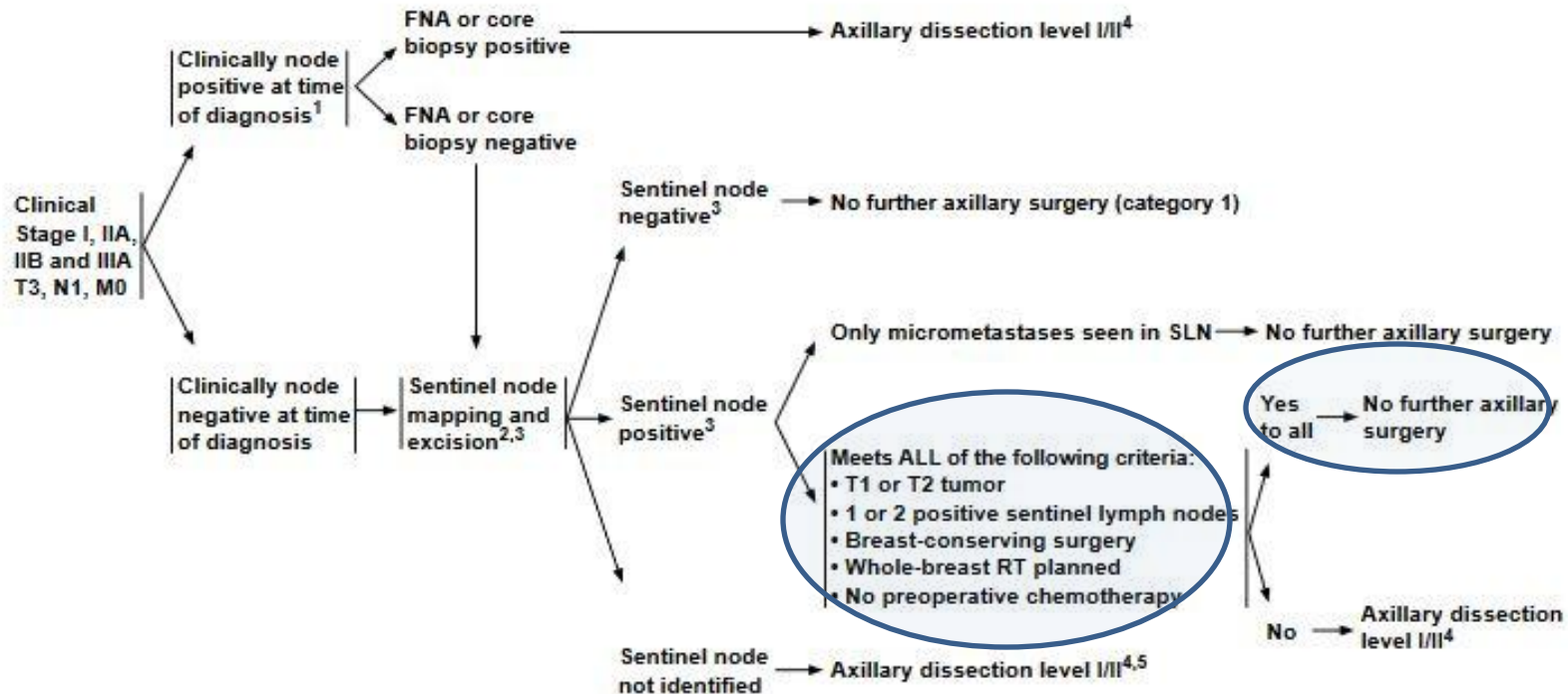


National  
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## NCCN Guidelines Version 3.2017 Invasive Breast Cancer

[NCCN Guidelines Index](#)  
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### SURGICAL AXILLARY STAGING - STAGE I, IIA, IIB and IIIA T3, N1, M0



**Trialul AMAROS** – iradierea axilei este o alternativa acceptabila limfadenectomiei pt. pacientii care nu indeplinesc criteriile trialului Z0011



## Urmatoarea etapa

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Imagistica

Genetica



evita evaluarea chirurgicala a axilei

# Protocolul IOCN

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?

Opțiune personala:

- Trasor colorat  $\pm$  radio-trasor
- Injectare periareolara/subareolara
- Disectia axilei
- Examinare HP  $\pm$  IHC

# Protocolul IOCN

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## Discutii

- interventie anterioara la nivelul sanului
- DCIS
- post-NAC
- pentru recidive (dupa chir. conservatoare si GS)