



EUROPEAN LUNG CANCER
CONFERENCE 2016

WHO 2015

IMPACT OF THE NEW CLASSIFICATION:

THE SURGEON'S VIEW

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DISCLOSURE SLIDE

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Impact of the new WHO 2015 Classification

The Surgeon's view

- ♦ early-stage lung cancer: screening – T descriptor
- ♦ new WHO 2015 classification: what should the surgeon know?
- ♦ limited resection for early stage IA adenoca.
- ♦ conclusion

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STS task force on CT screening

Chair G. Rocco, Naples

- ♦ Main objectives
 - minimizing morbidity of false-positive diagnoses
 - optimizing management of screen-detected lung cancers

- ♦ Statement 5
 - *the Taskforce recommends the least parenchymal resection compatible with current diagnostic and oncologic principles performed through the least invasive surgical approach for the diagnosis and treatment of screen-detected nodules*

Rocco G et al. Ann Thor Surg 2013; 96:357-60

STS task force on CT screening

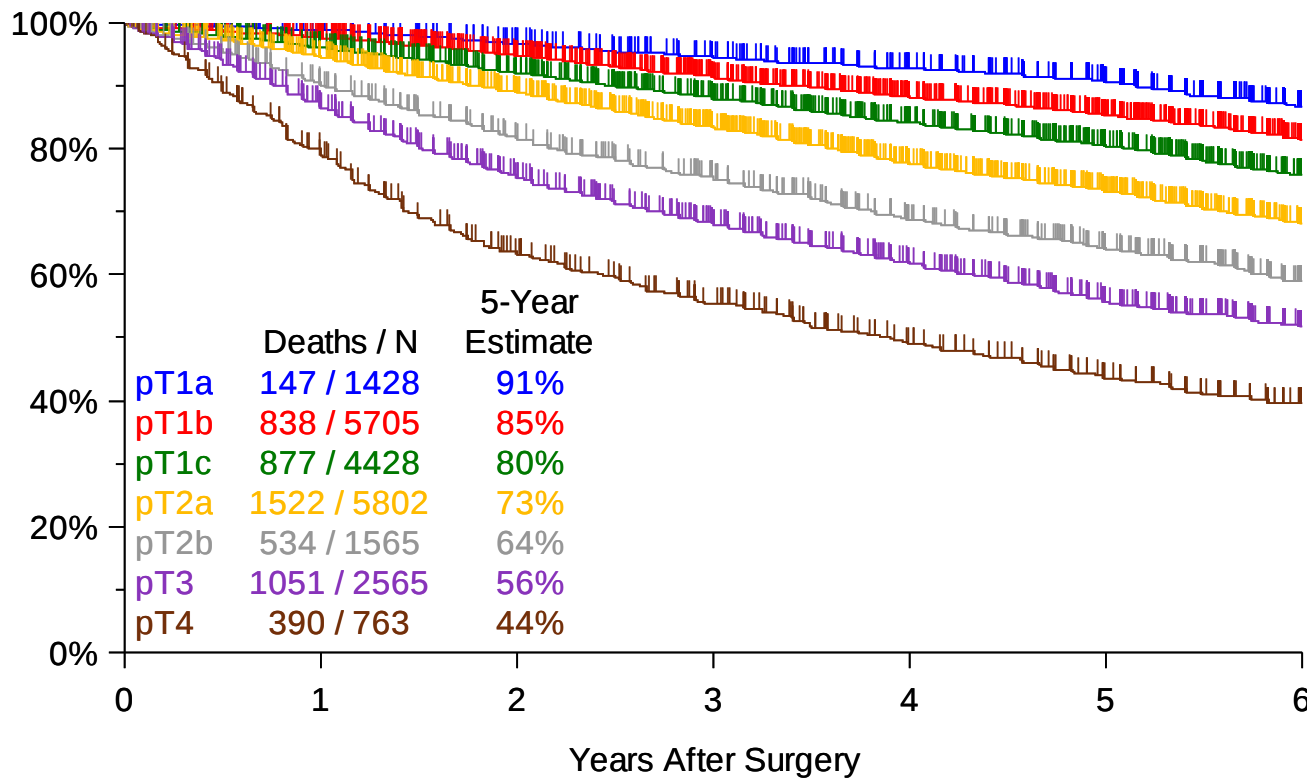
Chair G. Rocco, Naples

- ◆ Statement 6
 - *the Taskforce strongly recommends standardized pathological reporting on surgical specimens, according to the criteria expressed in the 2011 IASLC/ATS/ERS adenocarcinoma classification (WHO 2015 classification)*
- ◆ Statement 7
 - *the Taskforce believes that CT screening programs should follow a formal algorithmic approach to standardize management*

Rocco G et al. Ann Thor Surg 2013; 96:357-60

8th TNM classification - T descriptor: size

PT1-4 N0M0 Cases (Any R)
Proposed T Status



T descriptors

pT1a ≤ 1 cm
 pT1b 1.1 - 2cm
 pT1c 2.1- 3.0 cm

 T2a 3.1- 4.0 cm
 T2b 4.1- 5.0 cm

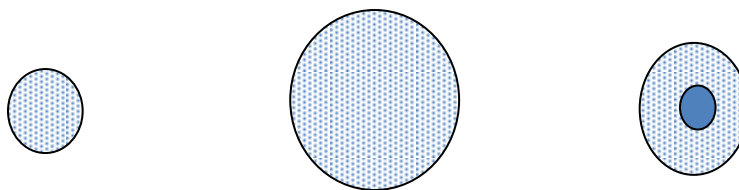
 T3 5.1- 7.0 cm
 T4 > 7.0 cm

Rami-Porta R. J Thorac Oncol 2015; 10:990-1003

T size: invasive part!

maximum *unidimensional* measurement
CT scan: lung window settings

pT

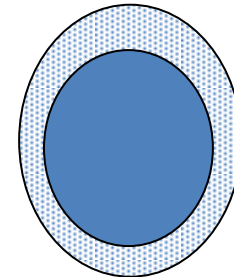
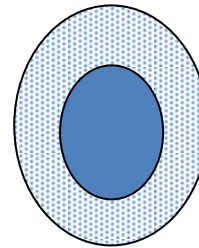
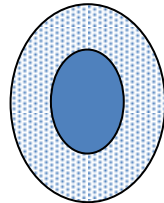


invasive part	0 cm	0 cm	0.1- 0.5 cm
total tumor size	≤ 0.5 cm	0.6 - 3.0 cm	0.1- 3.0 cm
pathology	AAH	AIS	MIA
pT		pTis	pT1a-mi

Travis WD. J Thorac Oncol 2016; in press

T size: invasive part!

pT



invasive part	0.6 - 1.0 cm	1.1 - 2.0 cm	2.1 - 3.0 cm
total tumor size	≤ 3.0 cm	≤ 3.0 cm	≤ 3.0 cm
pathology	lepidic predominant AD or invasive AD with lepidic component	invasive AD with lepidic component or lepidic predominant AD	invasive AD with lepidic component
pT	pT1a	pT1b	pT1c

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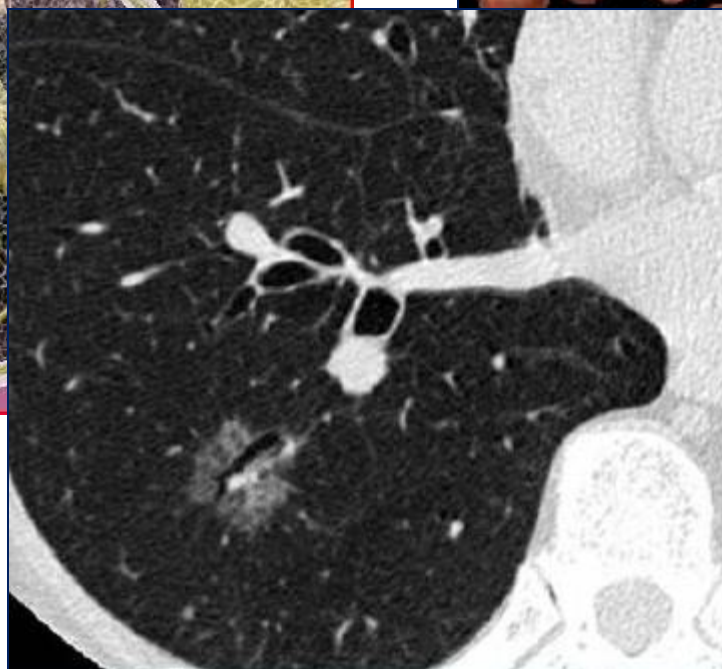
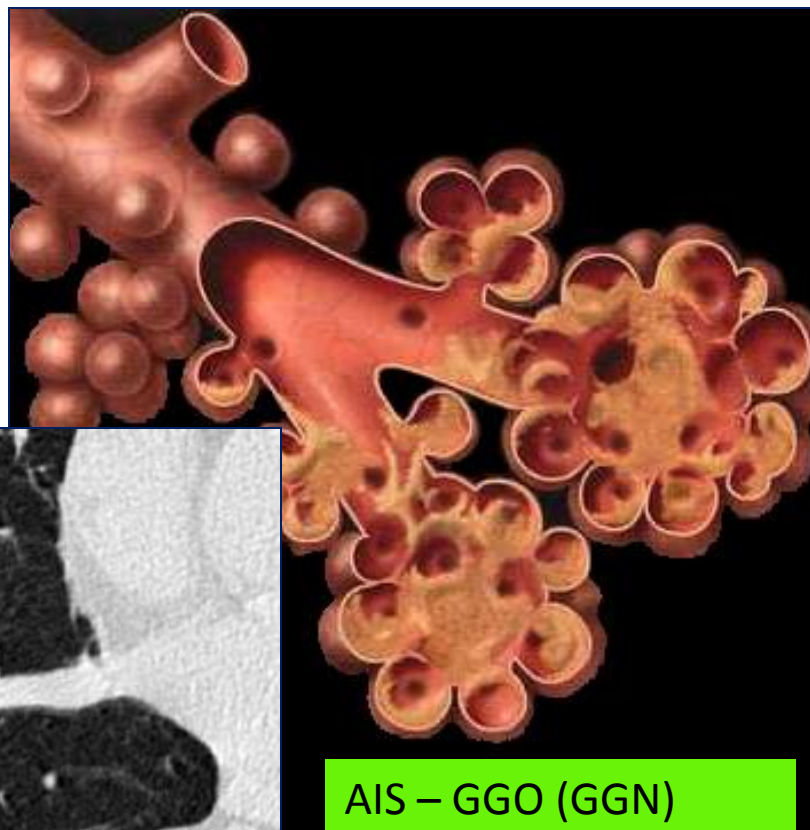
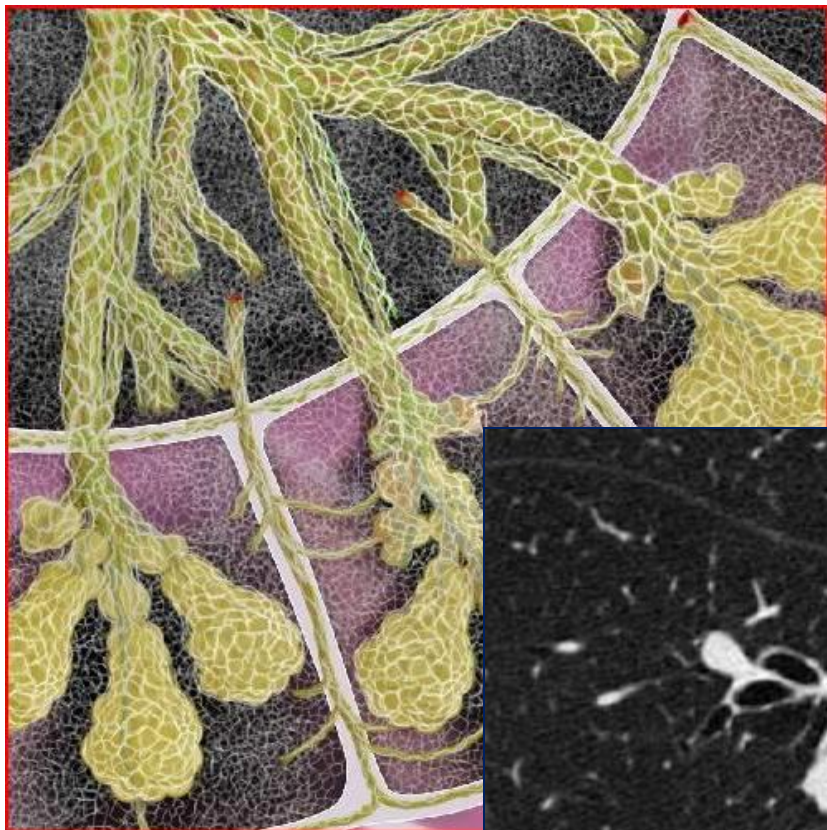
IASLC/ATS/ERS ADENOCARCINOMA 2011 CLASSIFICATION

- ◆ PREINVASIVE LESIONS
 - ◆ ATYPICAL ADENOMATOUS HYPERPLASIA [AAH]
 - ◆ ADENOCARCINOMA IN SITU [AIS] (≤ 3 cm - formerly BAC pattern)
non-mucinous ↑ / mucinous / mixed
- ◆ MINIMALLY INVASIVE ADENOCARCINOMA [MIA]
non-mucinous ↑ / mucinous / mixed
 ≤ 3 cm lepidic predominant tumor with ≤ 5 mm invasion
- ◆ INVASIVE ADENOCARCINOMA

Extensive sampling is needed to exclude invasion, particularly in larger tumors

Travis W et al. J Thorac Oncol 2011; 6:244-85

Van Schil P et al. Eur Resp J 2012; 39; 478-486



AIS – GGO (GGN)
no consolidation
no solid part



William D. Travis

BAC – BRONCHIOLOALVEOLAR CARCINOMA

RIP – REST IN PEACE

IASLC/ATS/ERS ADENOCARCINOMA 2011 CLASSIFICATION

❖ INVASIVE ADENOCARCINOMA

- ◆ Lepidic pattern predominant formerly non-mucinous BAC pattern, with > 5mm invasion
- ◆ Acinar *predominant pattern*
- ◆ Papillary
- ◆ Micropapillary
- ◆ Solid pattern

Poor prognosis!

Semiquantitative assessment of patterns in 5-10% increments

Warth A et al. J Clin Oncol 2012; 30:1438-46

Frozen section: accurate?

- ♦ review 361 resected stage I ADC ≤ 3 cm: analysis frozen section + permanent section slides
- ♦ $\uparrow$ specificity micropapillary 94% – solid 96% patterns
- ♦ $\downarrow$ sensitivity micropapillary 37% – solid 69% patterns
- ♦ satisfactory interobserver agreement (except acinar pattern)

Yeh YC et al. Histopathology 2015; 66:922-38

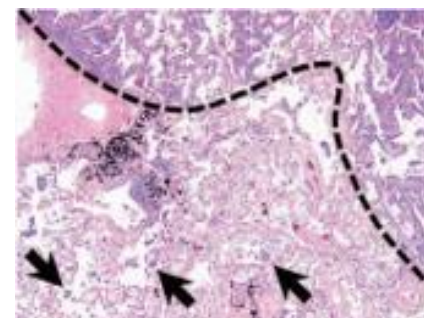
- ♦ retrospective study 803 pts stage I ADC, 432 pts sublobar resection
- ♦ concordance rate frozen section $\leftrightarrow$ final pathology 84.4%
- ♦ most discrepancies: underestimation of AIS, MIA
- ♦ accuracy frozen section ≤ 1 cm 79.6% > 1 cm 90.8% $p < .01$

Liu S et al. J Clin Oncol 2016; 34:307-13

New adenocarcinoma classification

Prognosis

- ♦ poor prognosis:
 - ♦ micropapillary $\geq 5\%$: $\uparrow$ risk of recurrence, especially with limited resection
 - ♦ solid pattern OS 58.1 mos $\leftrightarrow$ 78.5 mos lepidic ADC
 - ♦ STAS: *Spread Through Air Spaces* in the lung parenchyma beyond the edge of the main tumor



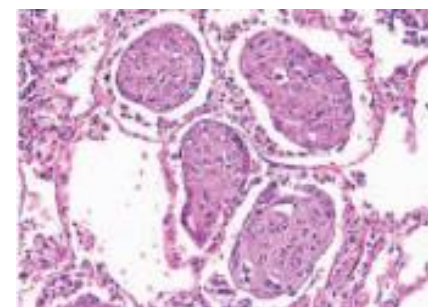
micropapillary
solid

- ♦ series 411 pts stage I ADC: STAS 155 cases (38%)

limited resection: STAS $\uparrow$ risk of recurrence:

5-year incidence 42.6% $\leftrightarrow$ 10.9% no STAS $p < .001$

lobectomy: no Δ



Nitadori J et al. J Natl Cancer Inst 2013; 105:1212-20

Warth A et al. J Clin Oncol 2012; 30:21438-46

Kadota K et al. J Thorac Oncol 2015; 10:806-14

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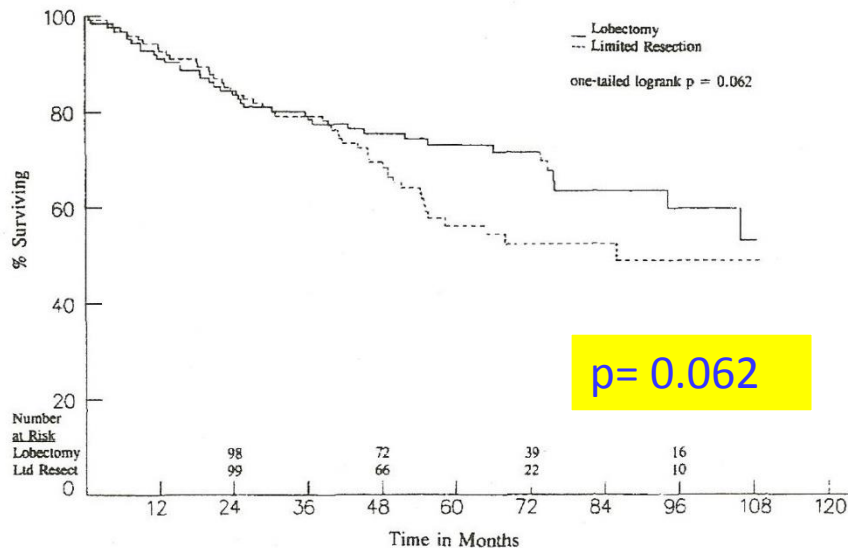
Is lobectomy standard therapy?

- ♦ LCSG: prospective randomized trial
lobectomy versus lesser resection
 - ❖ peripheral cT1N0 < 3cm
 - ❖ 50 % contra-indication to randomization :
 - not T1 (size, pleura)
 - not N0 (25% mediastinal LN involvement !)
 - ❖ postop. morbidity and mortality equal

Ginsberg RJ. Randomized trial of lobectomy versus limited resection for T1N0 NSCLC. Ann Thorac Surg 1995; 60:615-23

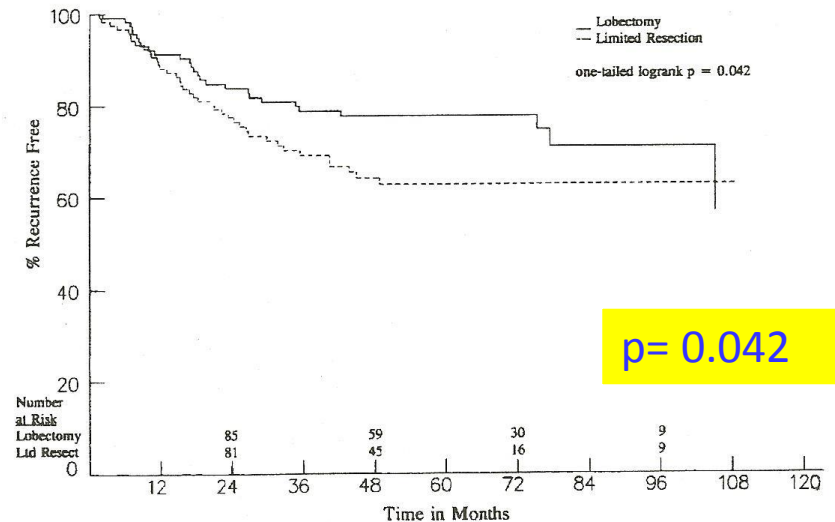
Is lobectomy standard therapy?

overall survival



p = 0.062

recurrence-free survival



p = 0.042

Rubinstein L, Ginsberg RJ. Reply to Lederle F. Lobectomy versus limited resection in T1N0 lung cancer. Ann Thorac Surg 1996; 62:1249-50

Is lobectomy standard therapy?

- LCSG: lesser resection
 - ❖ 3 x ↑ rate of local recurrence
 - ❖ long-term follow-up : decreased survival
 - ❖ 30 % ↑ overall death rate
 - ❖ 50 % ↑ death with cancer rate

significant at 0.10 level
minimal resection = lobectomy

Ginsberg RJ. Ann Thorac Surg 1995; 60:615-23

- small, early-stage lesions: sublobar resection (wedge – segmentectomy)?
↔ introduction SBRT
- lobectomy + systematic lymph node dissection:
“taking a sledgehammer to a fly”

Donington J. J Clin Oncol 2016; 34:295-6

Sublobar resection for stage I NSCLC

Review of sublobar resection ↔ lobectomy

- ♦ in general 5-year survival lobectomy = sublobar resection
- ♦ local recurrence after wedge resection ↑ than after segmentectomy
- ♦ tumors ≤ 2 cm segmentectomy $\approx$ lobectomy
- ♦ segmentectomy + (wide) wedge resection: margins ≥ 1 cm
- ♦ pure GGO ≤ 2 cm systematic nodal dissection may not be necessary
- ♦ but: randomized trials needed to obtain more evidence

Rami-Porta R, Tsuboi M. Eur Resp J 2009; 33:426-35

Sublobar resection for stage I NSCLC

Meta-analysis of sublobectomy ↔ lobectomy

- ♦ 24 eligible studies 1990 – 2010 11 360 patients
- ♦ overall survival (OS) and cancer-specific survival (CSS)
- ♦ stage I NSCLC: OS and CSS ↑ after lobectomy *HR 1.40*
- ♦ stage IA ≤ 2 cm: OS sublobectomy = lobectomy *HR 0.81*
- ♦ lobectomy ↔ segmentectomy: no Δ OS and CSS *HR 1.09 – 0.99*

- ♦ stage I sublobectomy ↓ survival ↔ lobectomy
- ♦ stage IA ≤ 2 cm sublobectomy = lobectomy

Fan J et al. Ann Surg Oncol 2012; 19:661-8

Selection criteria sublobar resection

Prospective studies

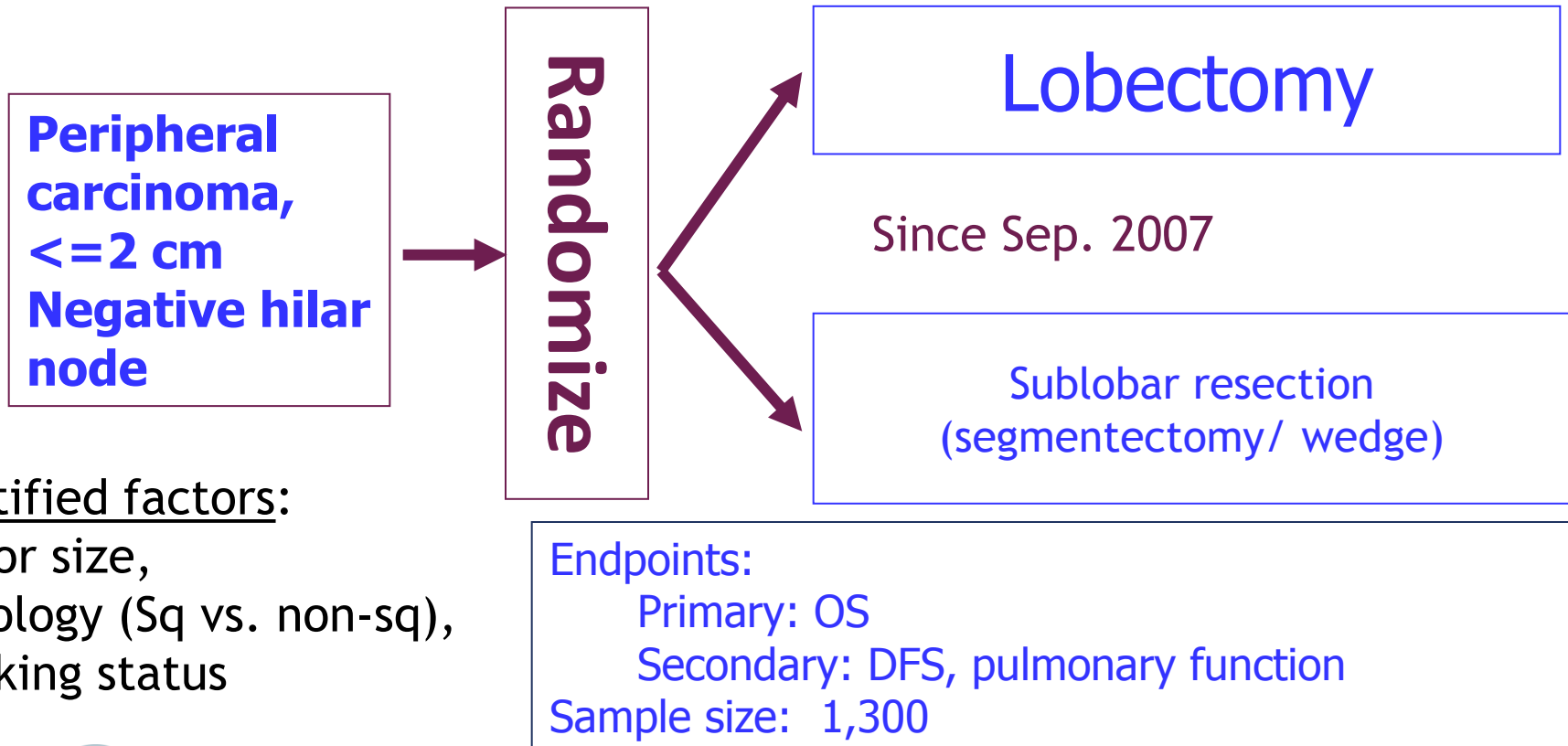
- ♦ JCOG 0804 adenocarcinoma ≤ 2 cm GGO
 <25% solid component (AIS, MIA)
 phase II wide wedge resection or segmentectomy single arm
- ♦ JCOG 0802 adenocarcinoma ≤ 2 cm
 25% - 100% solid component (invasive adenoca.)
 phase III prospective randomized trial
 lobectomy $\leftrightarrow$ segmentectomy
 + *LN drop out* $\rightarrow$ lobectomy

Asamura H et al. Surg Today 2014; 44:1593-4

CALGB 140503
Phase III Randomized Trial between Lobectomy and
Sublobar Resection for Small-sized carcinoma

Non-inferiority design

PI: Altorki N



Sublobar resection - indications?

- ♦ lobectomy remains gold standard
- ♦ sublobar resection: c stage IA and high-risk for lobectomy
precise definition of high-risk? ↔ SRT, RFA
- ♦ complete R0 resection + systematic nodal dissection recommended
N descriptor, prognosis, adjuvant therapy
De Waele M et al. Curr Opin Pulm Med 2015; 21:309-13
- ♦ sublobar resection stage IA disease, no nodal involvement
 peripheral tumor location
 predominantly ground-glass appearance
Sihoe A et al. Lung Cancer 2014; 86:115-20

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new WHO 2015 Classification: Surgeon's view

Conclusions

- ♦ low-dose CT screening: early-stage lung cancer in high-risk populations
- ♦ T-descriptor: Δ size, invasive part
- ♦ new adenoca. classification: preinvasive, minimally invasive, invasive lesions
 - ♦ *poor prognosis: micropapillary, solid patterns, STAS*
 - ♦ *frozen section: may be accurate (experienced pathologist!)*
- ♦ sublobar resection: selected early-stage disease, no nodal involvement
results of recent large randomized trials not yet available!