elcc European Lung Cancer Conference

Thymoma
Thoracic Surgery

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Organisers

IASLC International Association for the Study of Lung Cancer

ESMO GOOD SCIENCE BETTER MEDICINE BEST PRACTICE European Society for Medical Oncology

elcc European Lung Cancer Conference

Disclosure slide

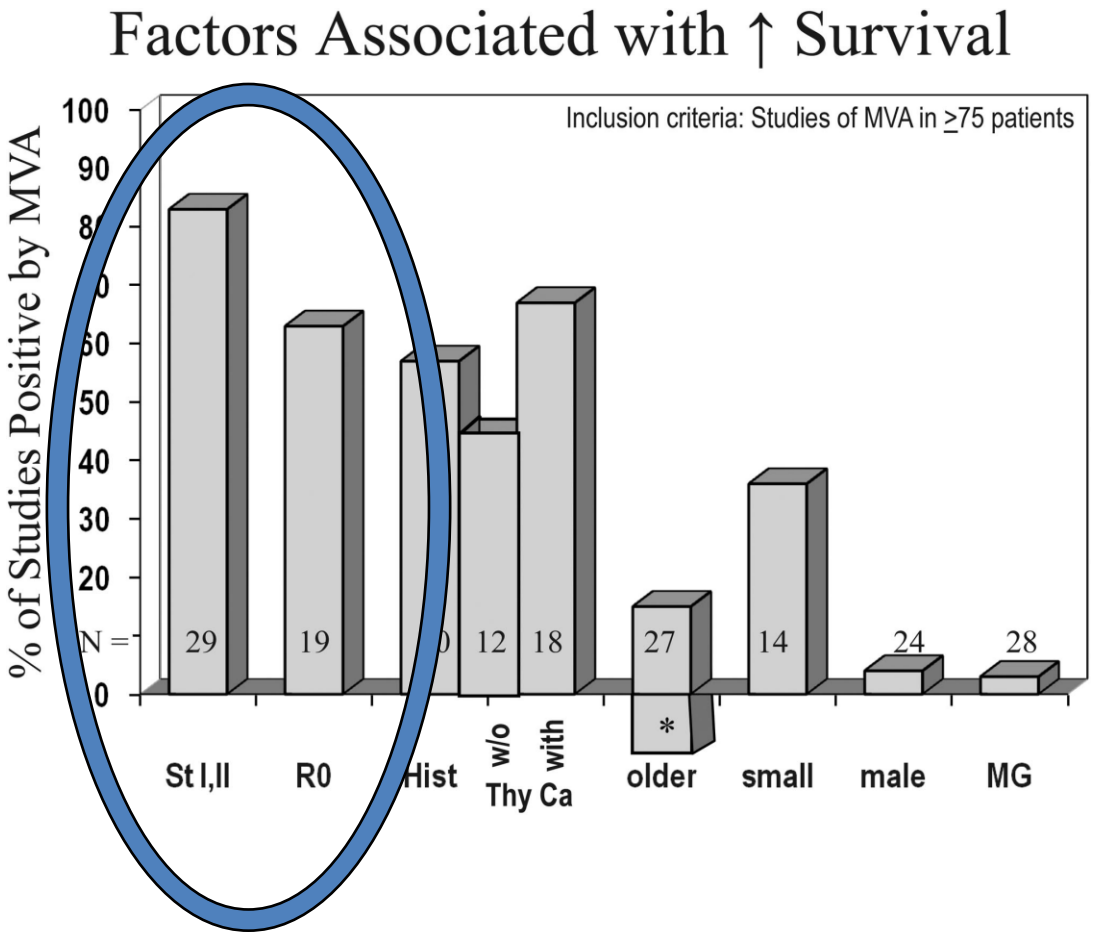
No conflict of interests

Thymoma epidemiology Poland (38 mln) 2010

ICD 10	Man	Woman	All
Thymic epithelial tumors [C37]	18	22	**40**
Neoplasm of mediastinum, heart and pleura[C38]	121	78	**199**

Krajowy Rejestr Nowotworów. 2011http://www.onkologia.org.pl

Thymoma - prognostic factors



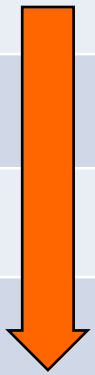
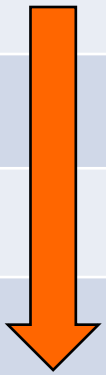
Detterbeck F. et al. JTO 2011;6;S1698-S1704

Thymoma: grade vs histological type

WHO type	Grade	Survival
A	low	97 +/- 6,4%
AB	low	95 +/- 5,3%
B1	low	90 +/- 8,7%
B2	intermediate	78 +/- 16,5%
B3	high	63 +/- 19%

Marchewsky AM et al. Cancer 2008;112: 2780

Thymic epithelial tumors: histologic classification vs grade vs stage

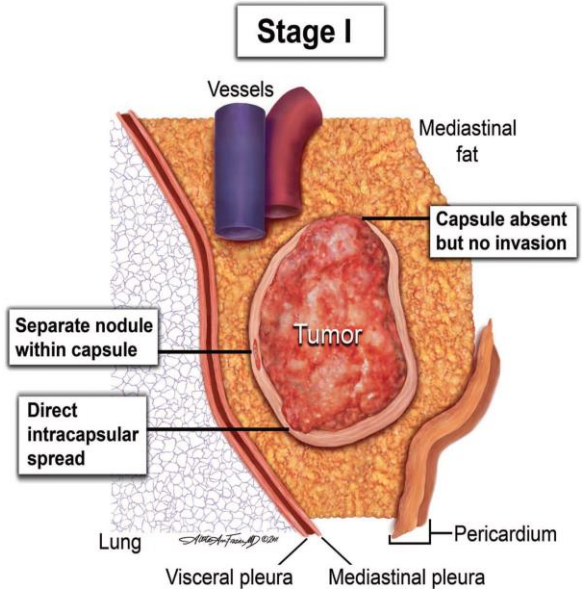
2004 WHO category	Grade	Stage
A	Grade 1	Stage I
AB		
B1		
B2		
B3		
Thymic carcinoma	Grade 3	Stage 4

Travis B. WCLC, Sydney 2013

Massaoka – Koga staging

ITMIG proposal

Stage I **completely encapsuleted tumor**

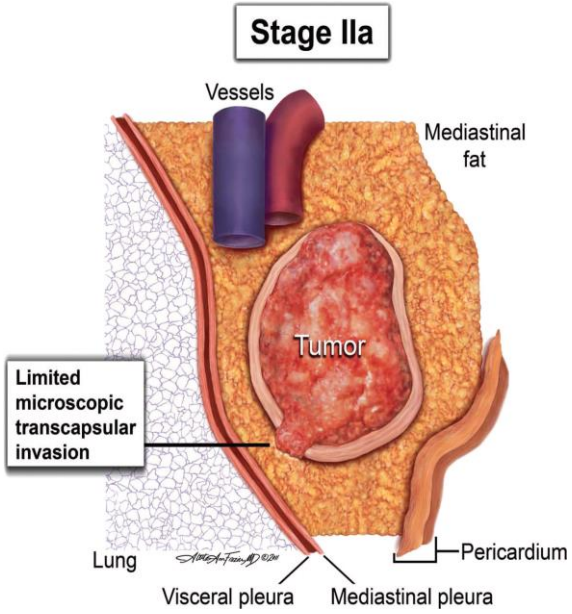


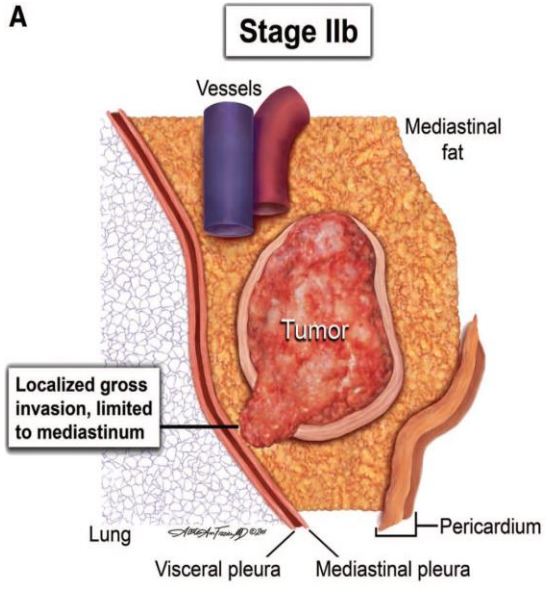
Detterbeck et al. JTO 2011; 6: Supplement 3

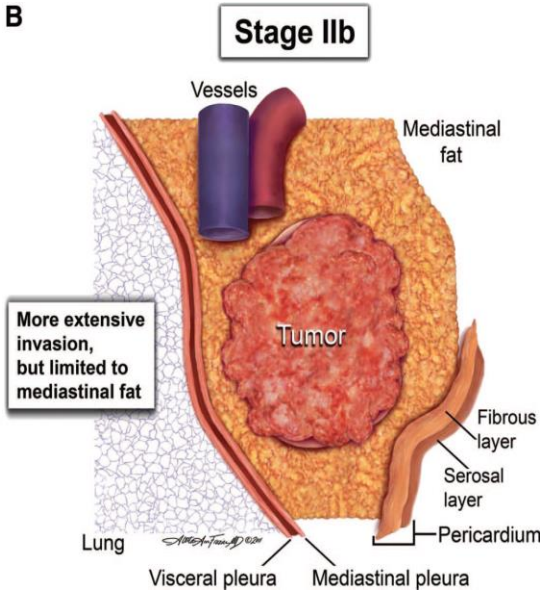
Massaoka – Koga staging

ITMIG proposal

Stage II A,B **pericapsular growth**





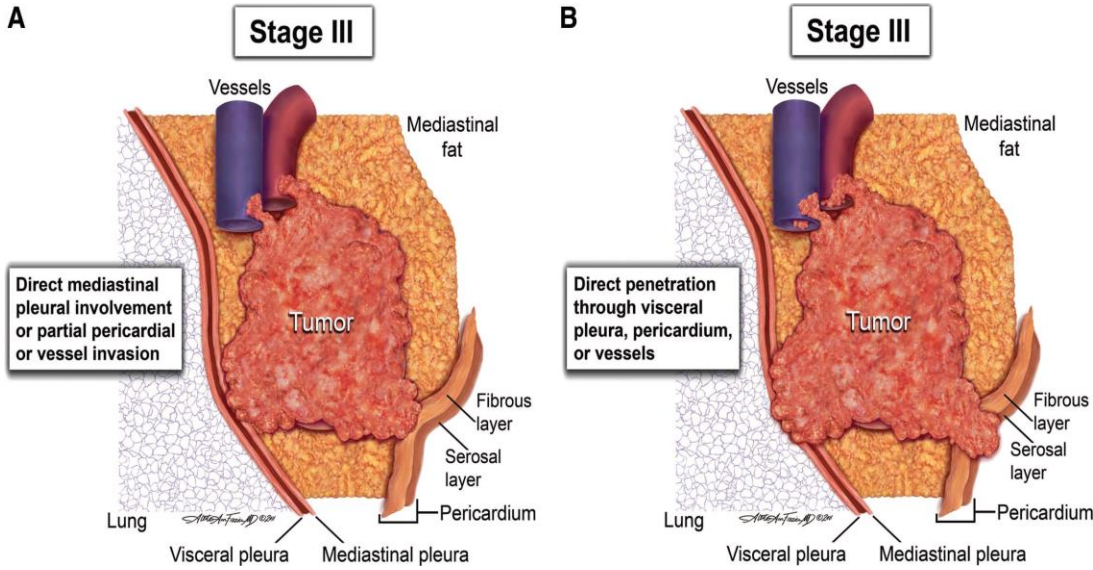


Detterbeck et al. JTO 2011; 6: Supplement 3

Massaoka – Koga staging

ITMIG proposal

Stage III **invasion of adjacent structures**

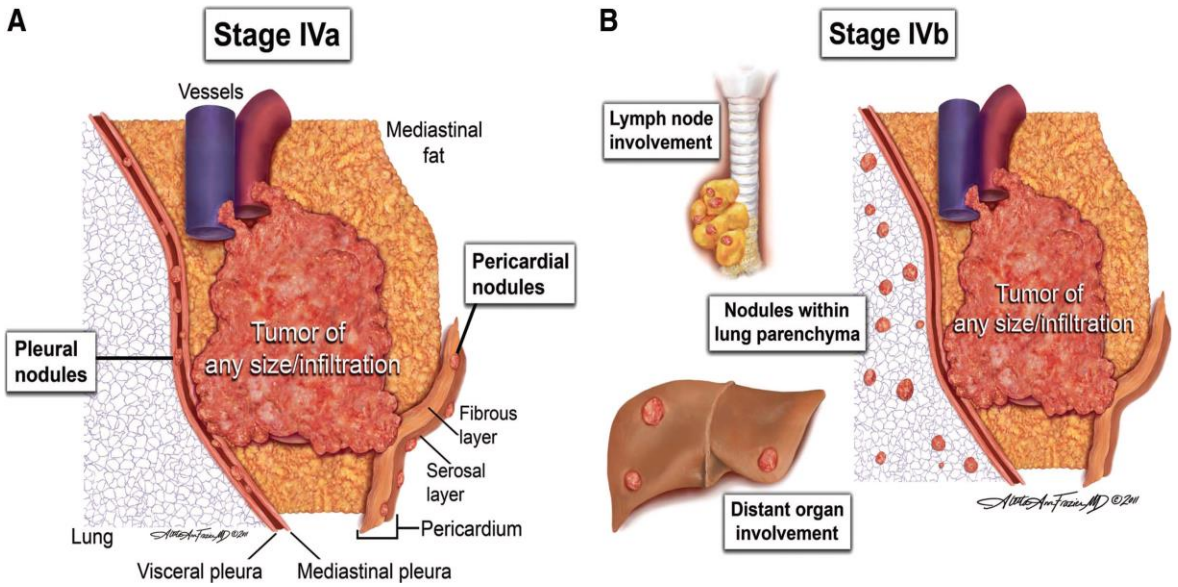


Detterbeck et al. JTO 2011; 6: Supplement 3

Massaoka – Koga staging

ITMIG proposal

Stage IV A, B **dissemination**



Detterbeck et al. JTO 2011; 6: Supplement 3

Thymoma and lymph node metastases

Incidence

Thymoma	**1,75% - 8%** (30% - stage III, IV)
Thymic carcinoma	**22% - 40%**

Location

Thymoma

Anterior mediastinum	**90%**
Intrathoracic site	25%

Thymic carcinoma

Anterior mediastinum	**70%**
Intrathoracic site	35%
Extrathoracic site	30%

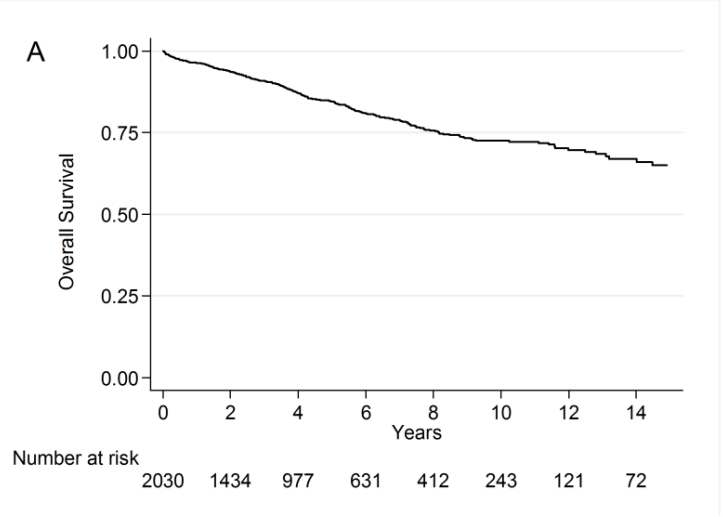
Kondo et al. Ann Thorac Surg 2003;76;1859-64
Nakagawa Y, WCLC 2013 Sydney
Jeon JH et al. JTO 2012;11;S417
Do YS et al. J Comp Assist Tomogr 1995;19:192-7

Surgery
cumulative results

	5-ys	10-ys
OS	85%	73%
DFS	84%	70%

30-days mortality 1%

Morbidity 6,8-18%



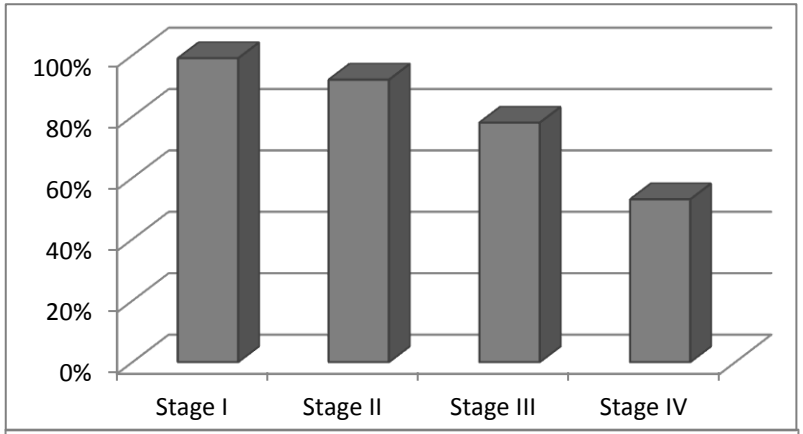
Predictors of shorter **OS** and **Reccurence**

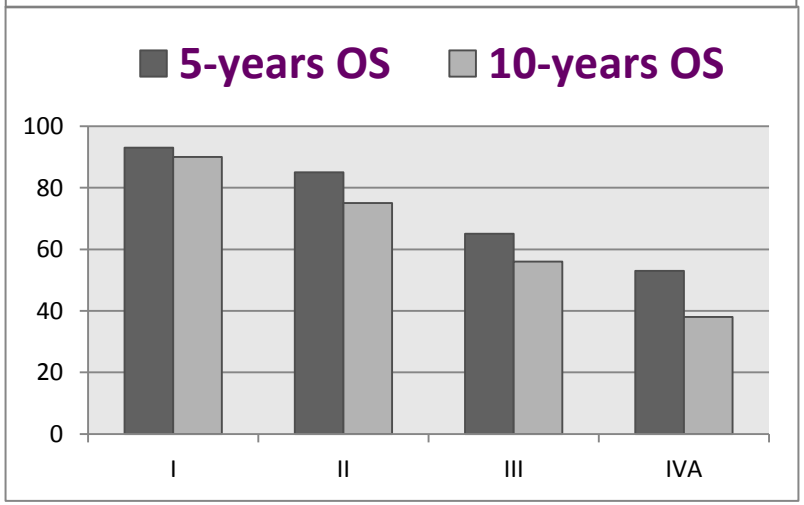
- ✓ **age**
- ✓ **stage** **III** *(HR - 5,7)* **IV** *(HR - 13,8)*
- ✓ **TC** *(HR – 2.39)* **NETT** *(HR – 2,59)*
- ✓ **Incomplete resection** *(HR – 1,74)*

Ruffini E. Et al. EJCTS 2014; 1-8

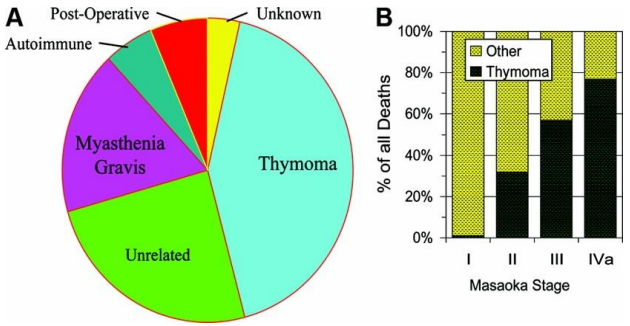
Thymoma
overall survival, resectability

Resectability





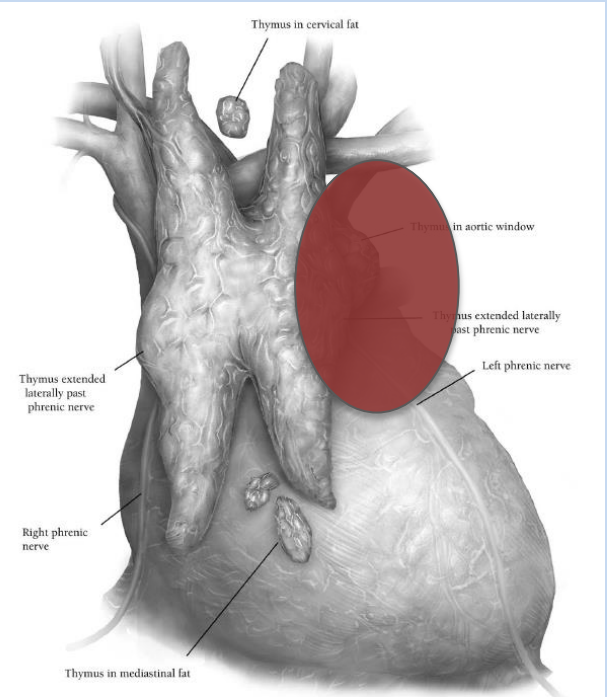
cause of death



Ruffini E. ESTS Thymic Working Group
Detterbeck F. J Thorac Oncol 2010; 5: S318 -22
Huang J. JTO 2010;5:2017-23

Surgery – important questions

Surgery must be optimal regardless the stage



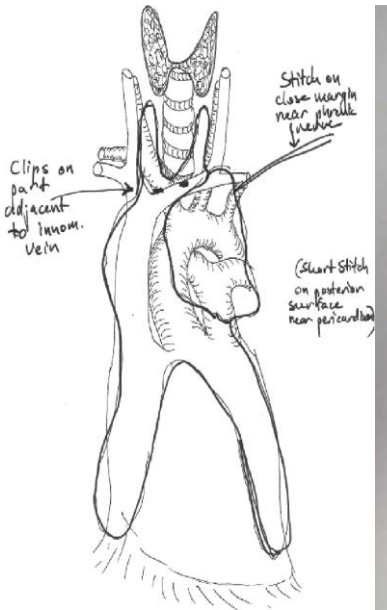
optimal = complete
maximal
oncologic principles
LND

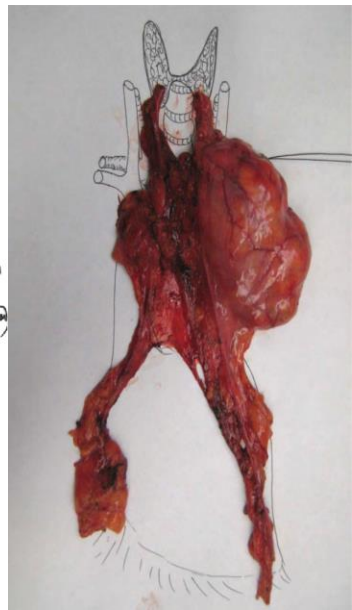
optimal = safe

Surgical and pathology report

Detterbeck F. Et al. JTO 2011;6:suppl. 3

- Handling of specimen
  - marking at the time of dissection
  - standard marking (pleura, pericardium, innominate vein)
  - work together
- Marking areas of concern with clips
- Precise description of operation
  - mediastinal diagram
  - simulation board
- Precise pathology report





Thymoma surgery STAGE I
VATS

- Stage I
- Tumor < 4 cm
- Asymptomatic patient
- Non MG patient
- CT image suggestive of non-invasive type

Disatvatages of VATS thymectomy:
- no data
- insufficient removal of the upper poles
- risk of capsule disrupture

Maggi L et al.J Neuroimmunol 2008;202:237-44

Thymoma surgery

Stage III (24%)

Surgeon decides if tumor is resectable or not.

„Thymectomy must be performed in the centers experienced with extended resections”. E. Ruffini

Complete resection = survival of stage I thymoma

Thymoma surgery
Stage IVa

- **Primary situation**
- **Recurrent disease**

- **Treatment options**
  - Pleurectomy
  - Pleuropneumonectomy
  - chemotherapy or photodynamic therapy, and radiation

All results presented in stage IVA
are highly biased by the selection criteria to surgery.

Regnard JF. J Thorac Cardiovasc Surg 1996;112:376-84.

Surgery stage IVa
results

- **Pleurectomy**

Table 2
Results of pleurectomy in stage IVA disease

Author, Year	No. of Patients	Induction	Mortality	Survival
Huang, 2007	14	PAC	0	5 NED, 7 AWD, 2 DOD
Ishkawa, 2009	7	6/7, CAMP	0	2 NED, 4 AWD, 2 TRD
Lucchi, 2009	20	None, 7 adjuvant	0	43% 5 year

- **Pleuropneumonectomy**

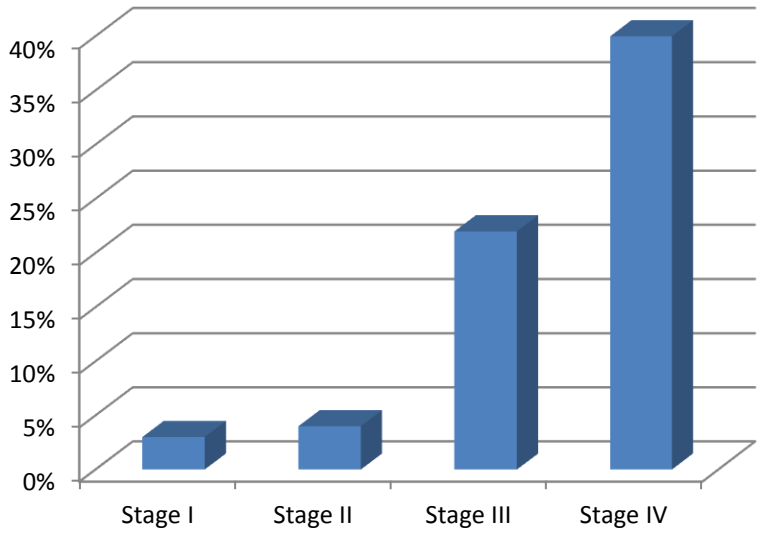
Table 3
Results of pleuropneumonectomy for stage IVA disease

Author, Year	No. of Patients, Thymoma with Cancer	Induction Therapy	Mortality	Adjuvant Therapy	Survival
Wright, 2006	5, All B3	2/5	0	5/5	75% 5 year
Huang, 2007	4, All thymomas	4/4	0	4/4	78% 5 year
Ishikawa, 2009	4, All thymomas	4/4	0	3/4	75% 5 year

Wright CD. Thorac Surg Clin 2011;21: 93–7

Thymoma
surgery for reccurence

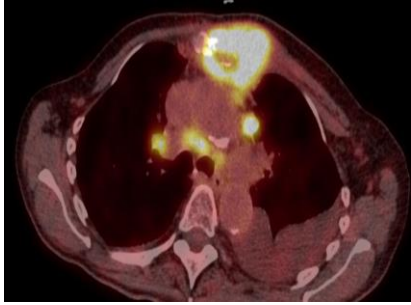
- **Pleural relapse** – 75%
- **Average time to reccurence - 5y**



- **Complete resection** – 50-60%
- **5-ys =** 44,7% **10-ys =** 27,1%

Lucci et al. JTO 2010;5,S348-51
Regnard JF. J Thorac Cardiovasc Surg 1996;112:376-84
Ruffini E. – ESTS Thymic Working Group

Thymic carcinoma



- **Incidence - 2-4/ 10mln**

- **2004 WHO classification – 11 subtypes of TC**

TSCC	40%
Lymphoepithelioma like carcinomas	15%
NETT	18%
Undifferenciated carcinomas	15%

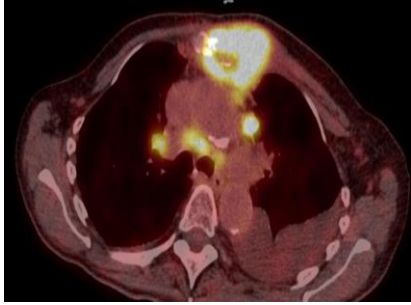
- **Prognosis**

TSCC	10-ys	=	45-65%
NETT	5-ys	=	28-75%

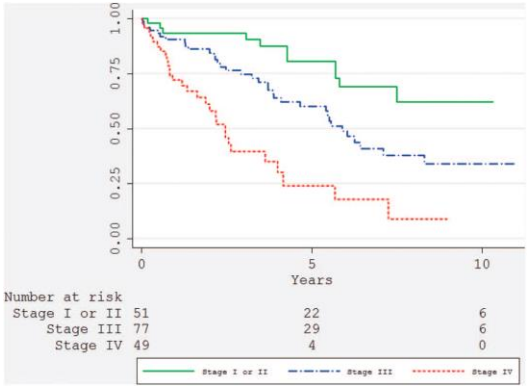
Marx A. et al. Thorac Surg Clin 2011;21;25-31

Thymic carcinoma

Ruffini E. et al. J Thorac Oncol 2014;9:541-8

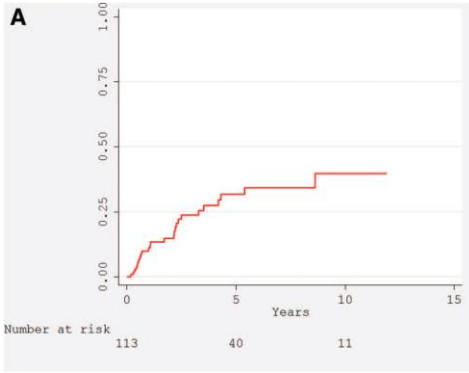


Masaoka-Koga vs TC

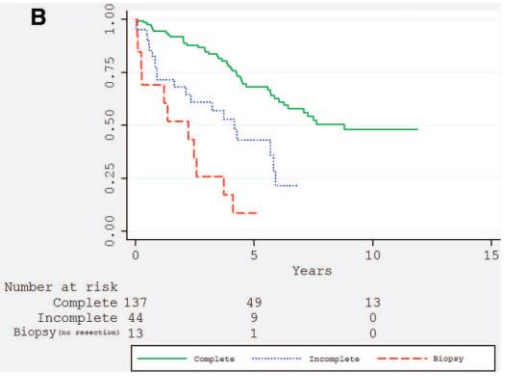


OS
5y - 61%
10y -37%
R- 69%

cumulative risk of reccurence



survival by the type of intervention



Thymoma – postoperative follow up

Second primary tumors

- **8-38%** of treated thymomas

Careful follow up

- yearly for at least 10 years

Chest CT

- 12 months

Welsh JS et al. JAMA 2000;283(9):1142-3
Welsh JS et al. Clin Med Res 2003;1(3):227-32

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BIOBANKING FOR SCIENCE?
DO IT!
in thymoma

Thank you

Witold Rzyman