



Matera,
9-10 maggio 2014

Carcinoma tiroideo differenziato: gestione della persistenza biochimica di malattia

Massimo Torlontano

U.O. Endocrinologia

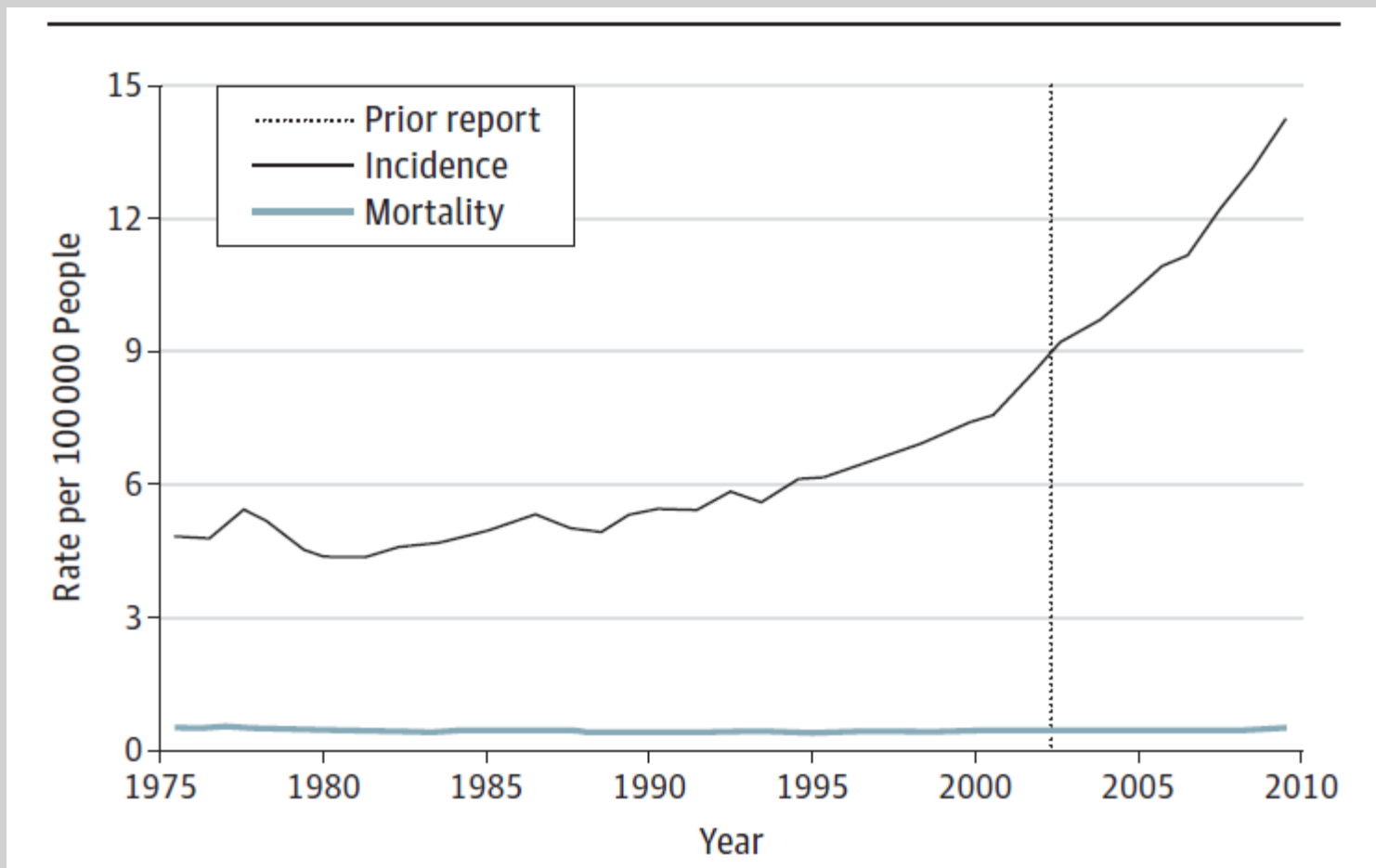
IRCCS Casa Sollievo della Sofferenza



Thyroid cancer Incidence 1975-2009 (USA)



Matera,
9-10 maggio 2014



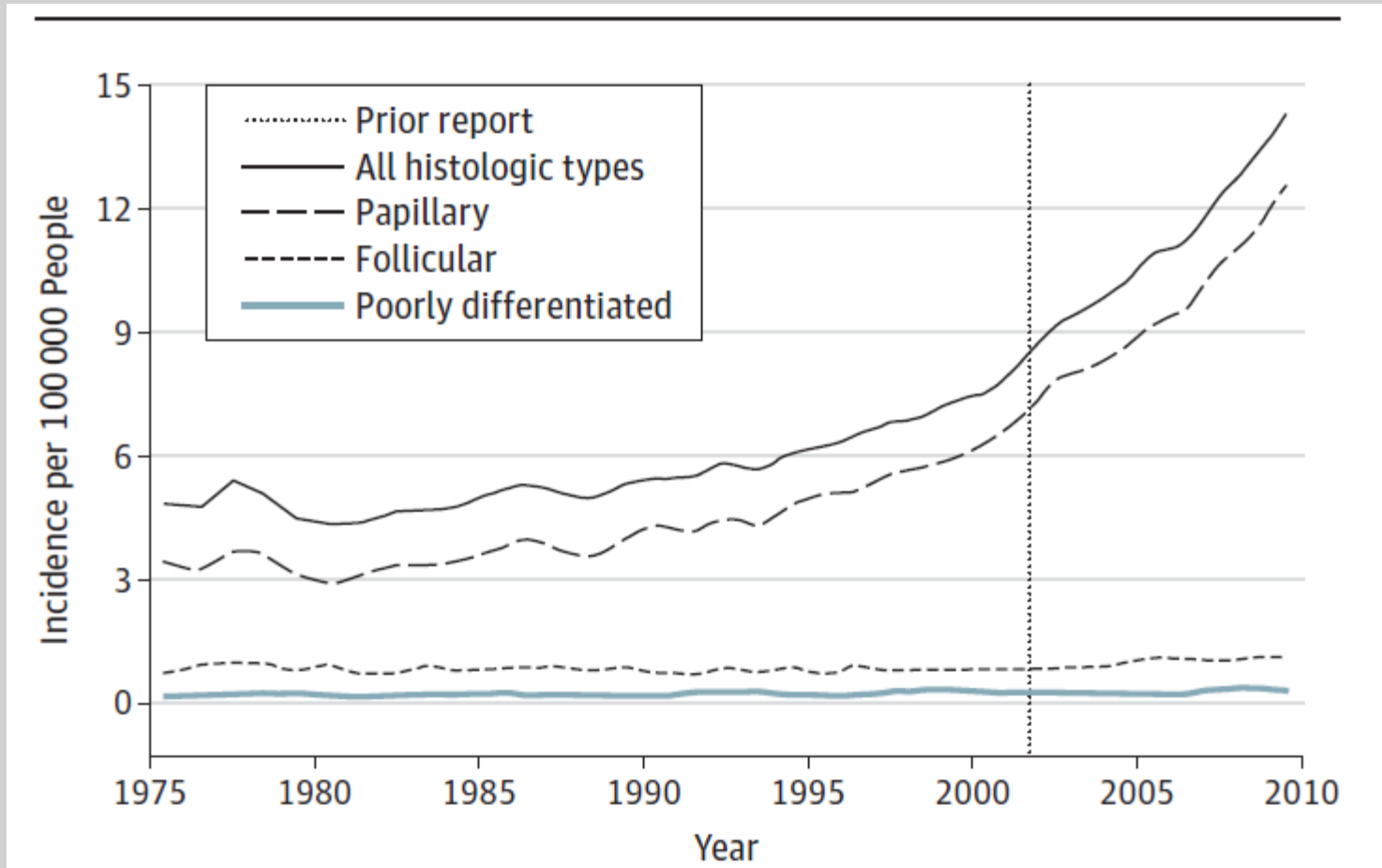
*Davies, JAMA Otolaryngol Head
Neck Surg 2014*



Thyroid cancer Incidence 1975-2009 (USA)



Matera,
9-10 maggio 2014



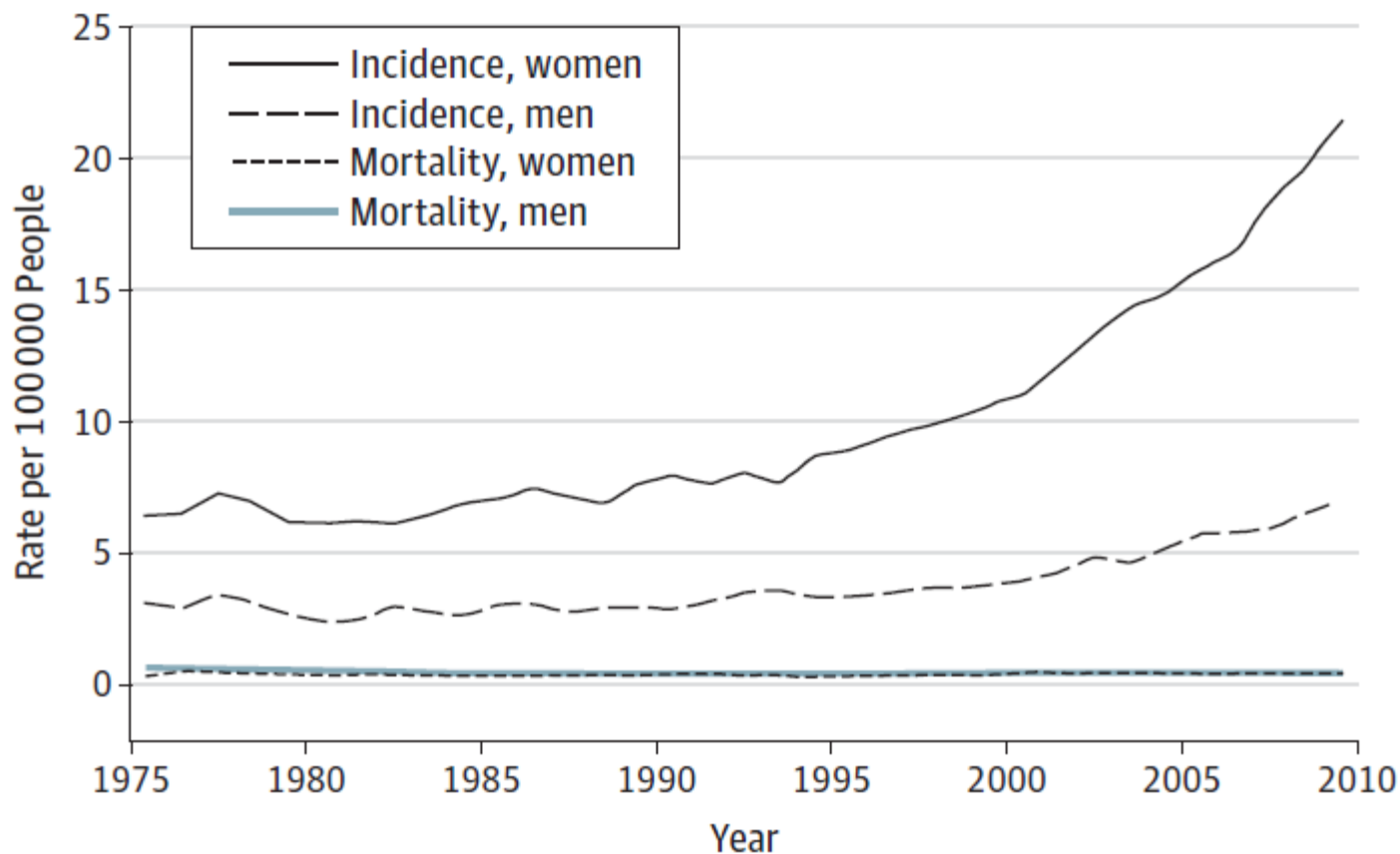
*Davies, JAMA Otolaryngol Head
Neck Surg 2014*



Thyroid cancer Incidence 1975-2009 (USA)



Matera,
9-10 maggio 2014



*Davies, JAMA Otolaryngol Head
Neck Surg 2014*



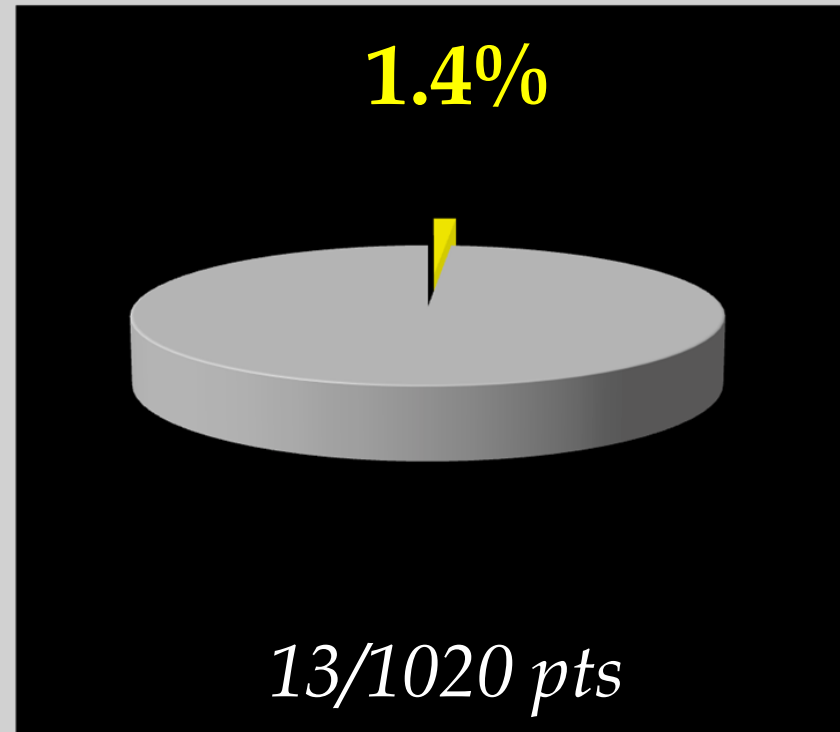
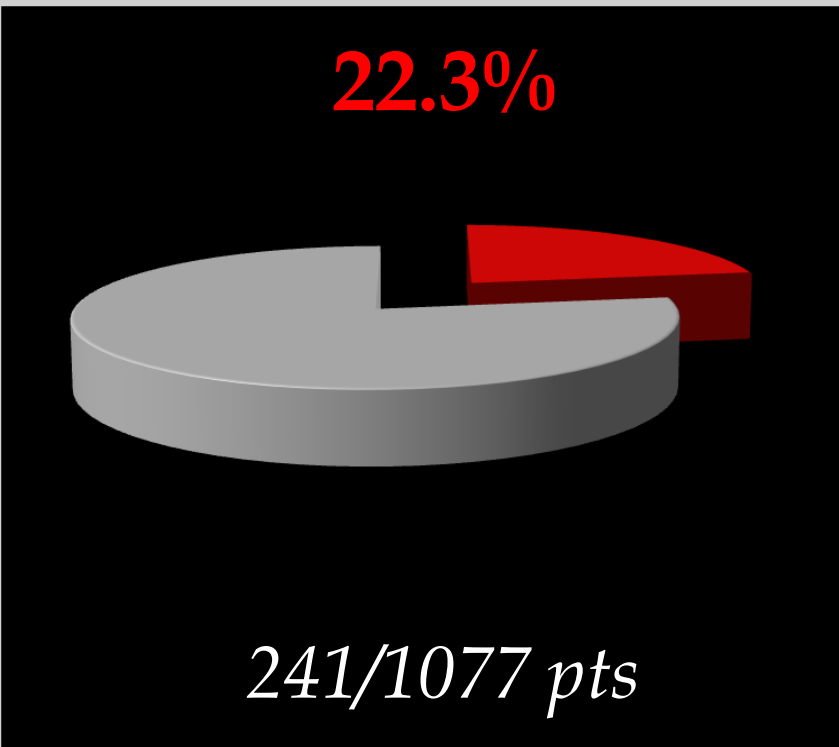
Global risk of recurrence



Matera,
9-10 maggio 2014

● The 1990s (1077 pts)

● The 2010s (1020 pts)



Mazzaferri & Jhiang, Am J Med, 1994

Durante *et al.*, JCEM, 2013



Staging systems



Matera,
9-10 maggio 2014

They only predict the risk of mortality (not of persistent or recurrent disease)

	EORTC	AGES	AMES	MACIS	OSU	SKMMC	AJCC
Age	X	X	X	X	--	X	X
Sex	X	--	X	--	--	--	--
Size (pT)	--	X	X	X	X	X	X
Multicentricity	--	--	--	--	X	--	--
Grade	--	X	--	--	--	X	--
Histology	X	PTC	X	PTC	--	X	X
Invasion (pT)	X	X	X	X	X	X	X
Nodes (N)	--	--	--	--	X	X	X
Metastases (M)	X	X	X	X	X	X	X
Complete surg.	--	--	--	X	--	--	--



Persistent disease



Matera,
9-10 maggio 2014

At first follow-up (~one year after primary treatment):

Biochemical: elevated basal or stimulated Tg without any structural evidence of disease

Structural: cytology, histology, sonography (lymph nodes) or other imaging (RAI, 18-FDG-PET, MRI or CT scan)



Recurrent disease



Matera,
9-10 maggio 2014

A new biochemical (suppressed Tg >1 ng/mL, and/or stimulated Tg >2 ng/mL), structural, or functional evidence of disease detected following any period of NED (not evidence of disease)



ATA staging system



Matera,
9-10 maggio 2014

<i>Low risk</i>	<i>Intermediate risk</i>	<i>High risk</i>
<ul style="list-style-type: none">✓ pT1-pT2✓ N0✓ No aggressive histology✓ No vascular invasion✓ No pathological ¹³¹I uptake	<ul style="list-style-type: none">✓ pT3✓ N0-N1✓ Aggressive histology	<ul style="list-style-type: none">✓ pT4✓ M1
Intra-thyroidal disease	Loco-regional disease	Metastatic disease



Current guidelines



Matera,
9-10 maggio 2014

Criteria for absence of residual disease:

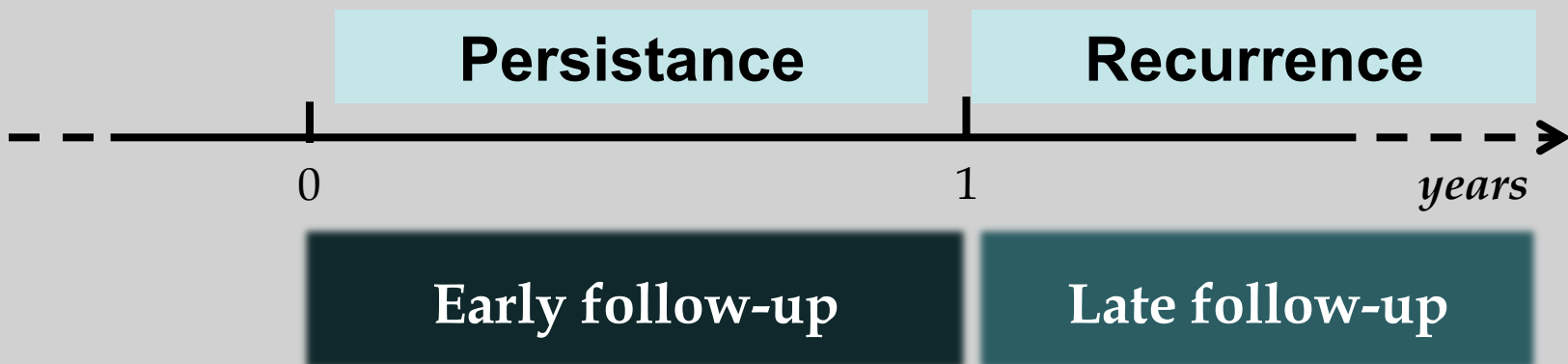
- No clinical evidence of tumor
- No imaging evidence of tumor (post-treatment WBS and neck US)
- Undetectable Tg levels during TSH suppression and stimulation, in the absence of Tg antibodies



During the follow-up...



Matera,
9-10 maggio 2014





The “ongoing risk”



Matera,
9-10 maggio 2014

After initial evaluation, the individual patient is re-evaluated at every point of follow-up (re-staging). Usually, many “intermediate-risk” pts are re-staged as “low-risk”, particularly if disease-free at early follow-up

In other words, the risk of recurrent disease changes over time during follow-up





Biochemical persistence



Matera,
9-10 maggio 2014

The other two thirds will show
**undetectable or decreasing or stable
Tg levels** without any signs of
residual disease

- *Cailleux et al. JCEM 2000*
- *Pacini et al. JCEM 2002*
- *Baudin et al. JCEM 2003*
- *Torlontano et al. JCEM 2004*
- *Castagna et al. JCEM 2008*
- *Crocetti et al Thyroid 2009*



Structural persistence



Matera,
9-10 maggio 2014

1020 PTC pts

625 low risk

362 interm. risk

33 high risk

6-12 months after primary treatment
(thyroidectomy \pm 131I)

Structural persistent disease: 72 pts (7.2%)

16 (2.5%)

41 (11.3%)

23 (69.7%)

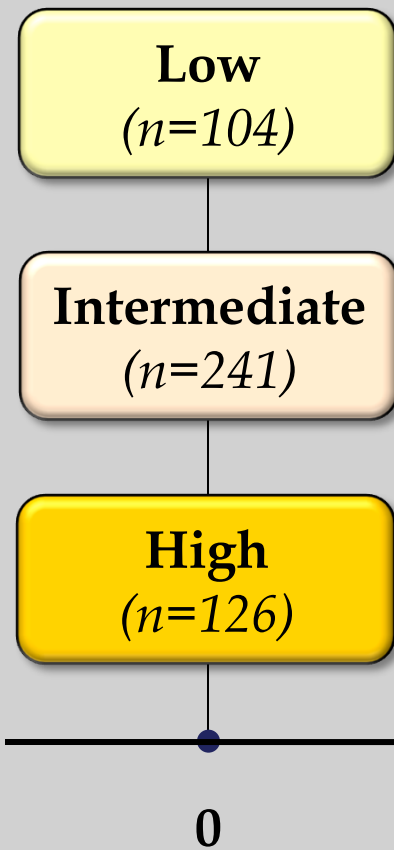


The “ongoing” risk

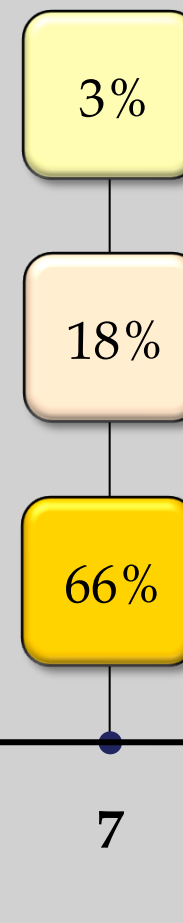


Matera,
9-10 maggio 2014

ATA risk



Recurrence/ structural persistence



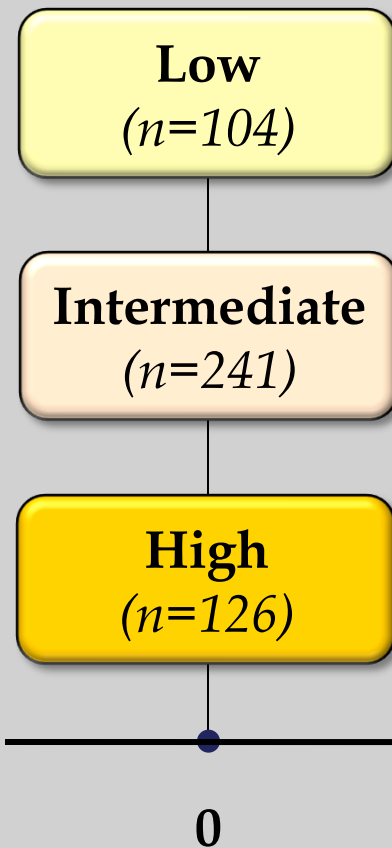


The “ongoing” risk

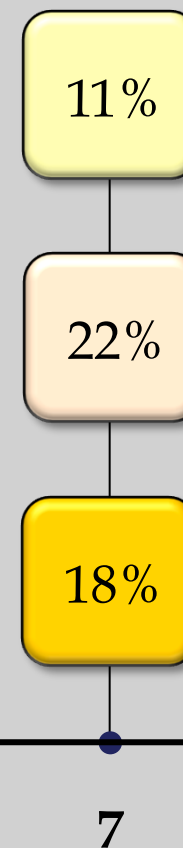


Matera,
9-10 maggio 2014

ATA risk



Biochemical persistence



Time
(yrs; median)

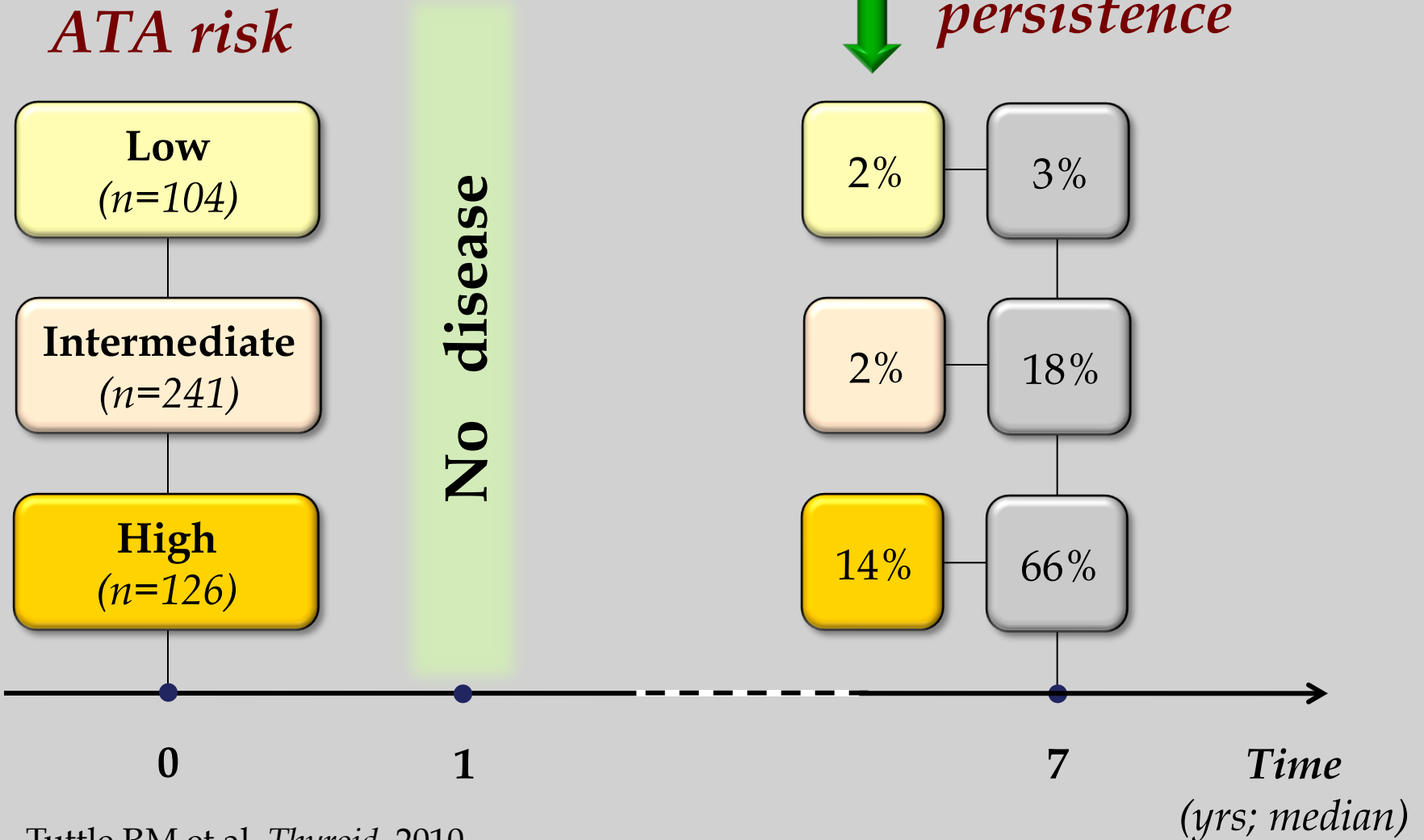


The “ongoing” risk



Matera,
9-10 maggio 2014

*Recurrence/structural
↓ persistence*

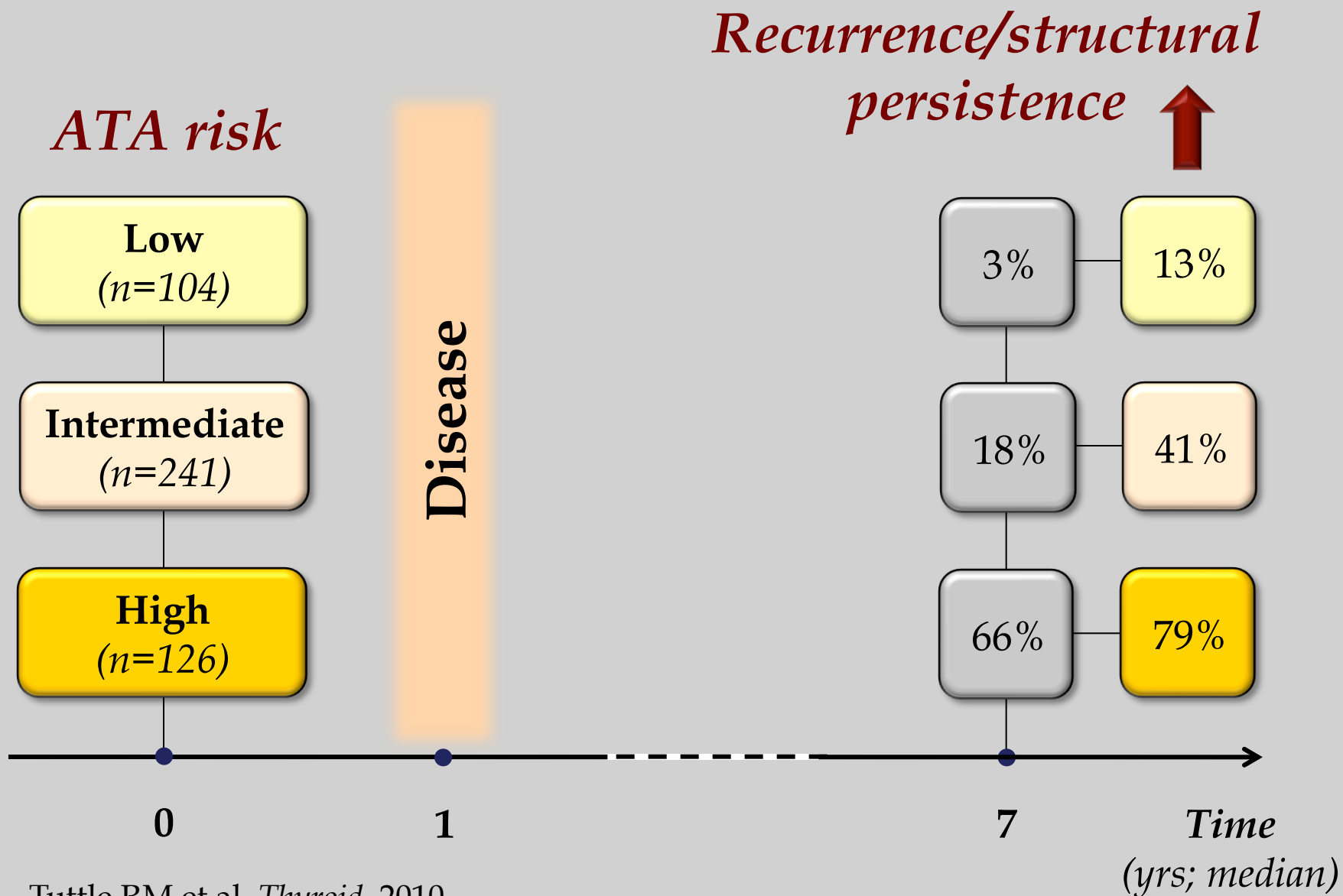




The “ongoing” risk



Matera,
9-10 maggio 2014





And what about not ablated patients?



Matera,
9-10 maggio 2014

Tg stimulation is useless, confirming only the presence of residual tissue

In most patients, Tg levels on L-T4 spontaneously decline (Tg <0.2 ng/ml in >80%, <1 ng/ml in >90%)

**Valuable tools:
neck US and Tg trend over time**

*Torlontano JCEM 2006
Durante JCEM 2012*

Nascimento EJE 2013



Conclusions



Matera,
9-10 maggio 2014

“...To minimize the diagnostic and therapeutic procedures without affecting the diagnostic accuracy and the therapeutic effectiveness, keeping in mind that we are dealing with patients who have a normal life expectancy and to whom we have to guarantee an excellent quality of life.”

From: Pazaitou-Panayiotou, Thyroid 2007