Prostate cancer AJCC Staging System and Risk Stratification

AJCC TNM 8th Ed

Presentation by: Mauricio Lema, 2018

What’s needed

- TNM
- PSA
- Gleason and grade group
- In some cases:
    - Number of fragments/core obtained
    - Number of fragments/core positive
    - Percentage of cancer cell in each core
    - PSA density
    - Number of cores with grade group 4 or 5

Tumor	Primary Tumor		
Tx	Primary tumor cannot be assessed		
T0	No evidence of primary tumor		
T1	T1a: Tumor incidental histologic finding in 5% or less of tissue resected	T1b: Tumor incidental histologi finding in more than 5% of tissue	T1c: Tumor identified by needle biopsy founding on or both side, but not
T2	T2a: Tumor involves one-half of one side or less	T2b: Tumor involves more than one-half of one side but not both	T2c: Tumor involves both sides
T3	T3a: Extraprostatic extension	T3b: Tumor invades seminal vesicle(s)	
T4	Tumor is fixed or invades adjacent structures other than spinal vesicles such as external sphincter, rectum, bladder, elevator muscles, and/or pelvic wall		

Tumor	Primary Tumor		
Tx	Primary tumor cannot be assessed		
T0	No evidence of primary tumor		
T1 **Clinically inapparent**	T1a: Tumor incidental histologic finding in 5% or less of tissue resected	T1b: Tumor incidental histologi finding in more than 5% of tissue	T1c: Tumor identified by needle biopsy founding on or both side, but not
T2 **Organ confined**	T2a: Tumor involves one-half of one side or less	T2b: Tumor involves more than one-half of one side but not both	T2c: Tumor involves both sides
T3 **Extraprostatic extension that is not fixed**	T3a: Extraprostatic extension	T3b: Tumor invades seminal vesicle(s)	
T4 **Tumor is fixed or invades adjacent structures**	Tumor is fixed or invades adjacent structures other than spinal vesicles such as external sphincter, rectum, bladder, elevator muscles, and/or pelvic wall		

N	Regional node		
NX	Regional nodes cannot be assessed		
N0	No positive regional nodes		
N1	Metastases in regional node(s)		
M	**Distant metastasis**		
M0 **No distant metastasis**	No distant metastases		
M1 **Distant metastasis**	M1a: Non-regional lymph node(s)	M1b: Bone(s)	M1c: Other site(s) with or without bone disease*

***If more than one site involved, choose highest stage (ie, M1c)**

Grade Group	Gleason Score	Gleason Pattern
1	≤6	≤3 + 3
2	7	3 + 4
3	7	4 + 3
4	8	4 + 4, 3 + 5, 5 + 3
5	9-10	4 + 5, 5 + 4, 5 + 5

cT1a-c N0 M0
cT2a N0 M0
pT2 N0 M0
and
PSA<10
and
Group 1

Stage I

cT1a-c N0 M0
cT2a N0 M0
pT2 N0 M0
and
PSA≥10-<20
and
Group 1

Stage IIa

T1-2 N0 M0
and
PSA<20
and
Group 2

Stage IIb

Prostate Cancer - Staging System

cT2b-c N0 M0
and
PSA<20
and
Group 1

Stage IIa

T1-2 N0 M0
and
PSA<20
and
Group 3 or 4

Stage IIc

T1-2 N0 M0
and
PSA≥20
and
Group 1-4

Stage IIIa

T3-4 N0 M0
and
Any PSA
and
Group 1-4

Stage IIIb

T1-4 N0 M0
and
Any PSA
and
Group 5

Stage IIIc

Prostate Cancer - Staging System

T1-4 N1 M0
and
Any PSA
and
Any Grade Group

Stage IVa (Regional)

T1-4 N0-1 M1
and
Any PSA
and
Any Grade Group

Stage IVb (Metastatic)

Stage I

Risk Group	Clinical/pathologic features
Very Low	T1c AND Grade Group 1 AND PSA< 10 AND Fewer than 3 prostate biopsy fragments/cores positive, ≤50% cancer in each fragment/core AND PSA density <0.15 ng/mL/g
Low	T1-T2a AND Grade group 1 AND PSA<10 AND Percentage of positive biopsy cores <50%

cT1a-c N0 M0
cT2a N0 M0
pT2 N0 M0
and
PSA≥10-<20
and
Group 1

Stage IIa

cT2b-c N0 M0
and
PSA<20
and
Group 1

Stage IIa

T1-2 N0 M0
and
PSA<20
and
Group 2

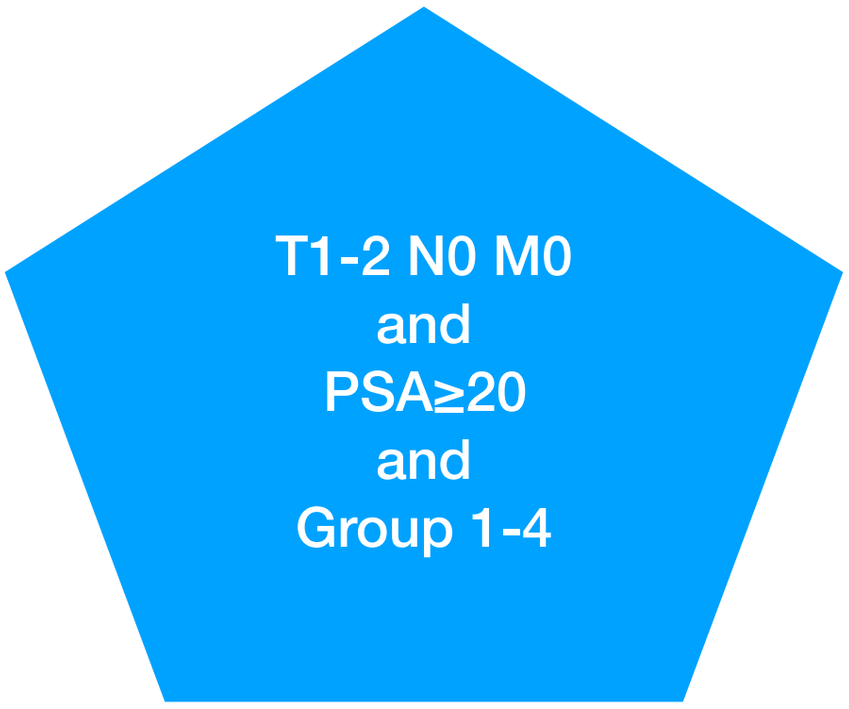
Stage IIb

Risk Group	Clinical/pathologic features
Favorable Intermediate	T2b-T2c OR Grade Group 2 OR PSA 10-20 AND Percentage of positive biopsy cores <50%
Unfavorable intermediate	T2b-T2c OR Grade group 2 or 3 OR PSA 10-20

Note: Some stage IIc are Unfavorable Intermediate Risk (ie, T1-2 N0 M0 - PSA <20 - Grade group 3)

T1-2 N0 M0
and
PSA<20
and
Group 3 or 4

Stage IIc



Stage IIIa

Stage IIIb

Stage IIIc

Risk Group	Clinical/pathologic features
High	T3a OR Grade Group 4 or 5 OR PSA >20
Very High	T3b-T4 OR Primary Gleason Pattern 5 OR >4 cores with Grade Group 4 or 5

Note: Some stage IIc are High Risk (ie, T1-2 N0 M0 - PSA <20 - Grade group 4)

Very Low

Very High

Stage III

Stage I

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

Very Low

Very High

Stage III

Stage I

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

Very Low

Very High

Stage I

Stage III

short life-expectancy (ie, <10y)

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

Very Low

Very High

Stage I

Stage III

short life-expectancy (ie, <10y)

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

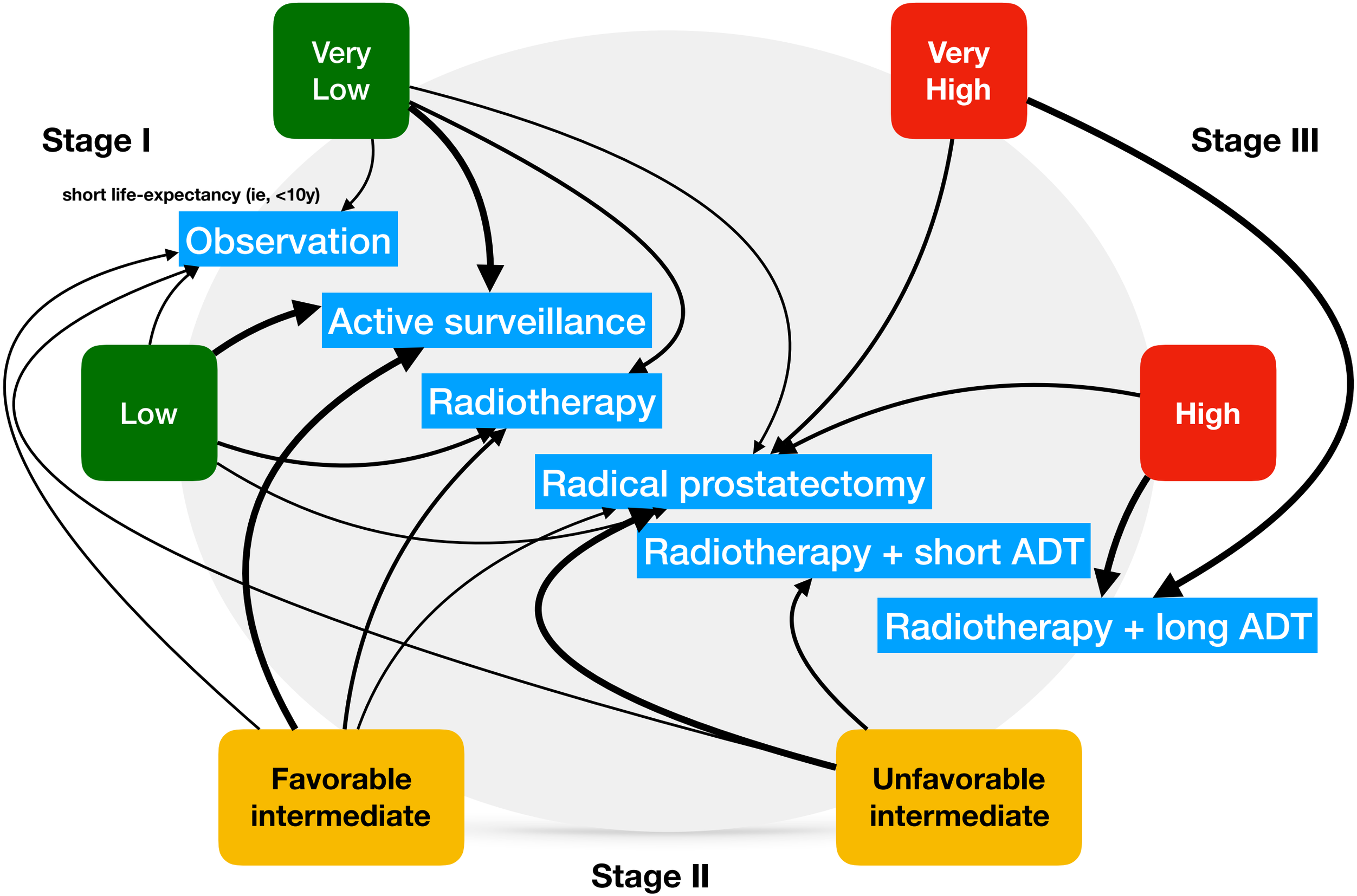
Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy



Treatment recommendations by the NCCN, Version 3.2018

ADT: Androgen deprivation therapy
Short (4-6 months) Long (2-3 years)

Active surveillance

Semi-annual PSA testing, annual DRE (or TRUS) and annual biopsy

One version, of many

Active surveillance
- Candidates -

Grade group 1 (Gleason score ≤6)
T1, T2a
PSA <10
Less than 1/3 cores/fragments positive
All cores/fragments <50% positive

Mostly, includes patients with in the very low risk and in the low risk category

One version, of many

Active surveillance
- Triggers for action -

PSAV > 0.75/year (PSA)
> cT2a (DRE/TRUS)
Gleason Score > 6 (TRUB)

One version, of many

Very Low

Very High

Stage I

Stage III

Observation

Active surveillance

Radiotherapy

Low

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

Very Low

Very High

Stage I

Stage III

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

Very Low

Very High

Stage I

Stage III

short life-expectancy (ie, <10y)

Observation

Active surveillance

Radiotherapy

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Low

High

Favorable intermediate

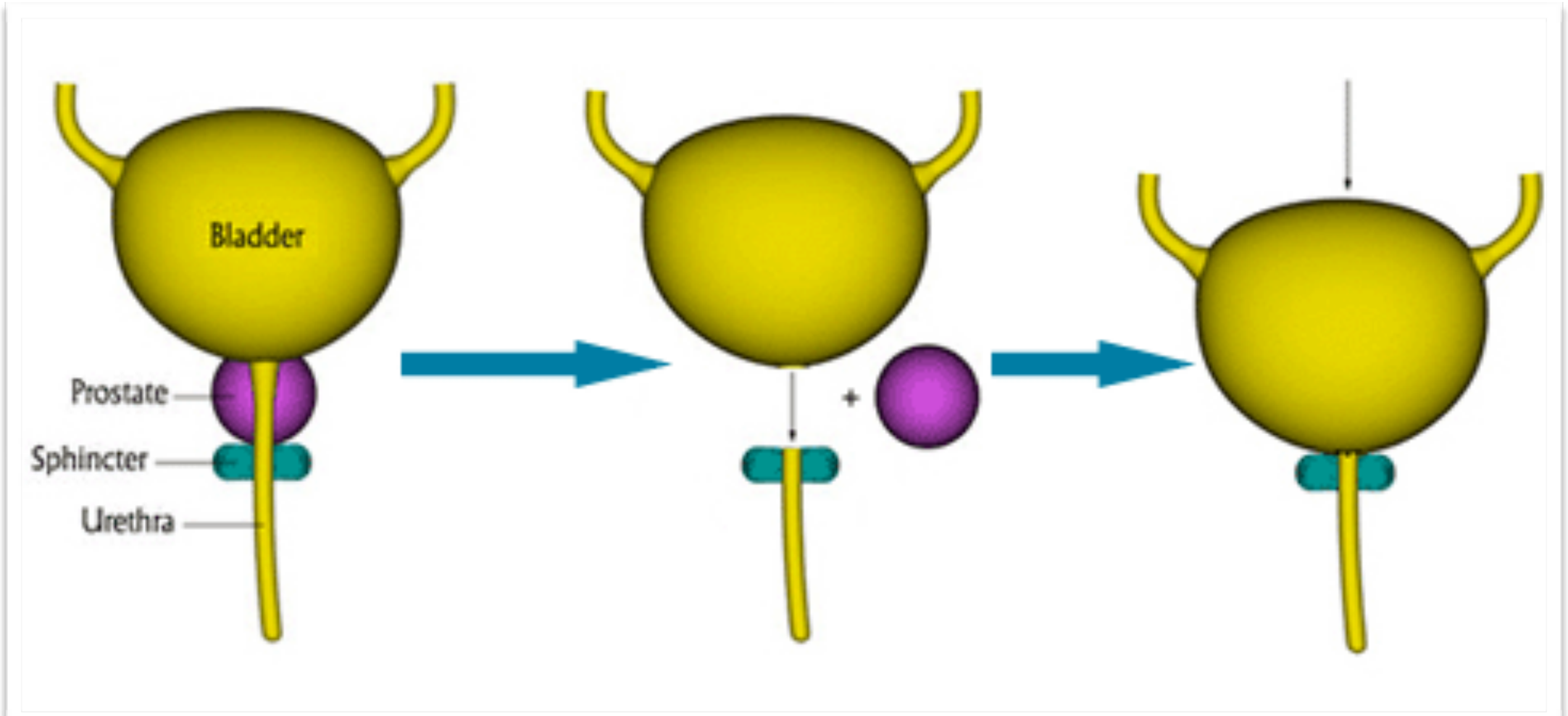
Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy

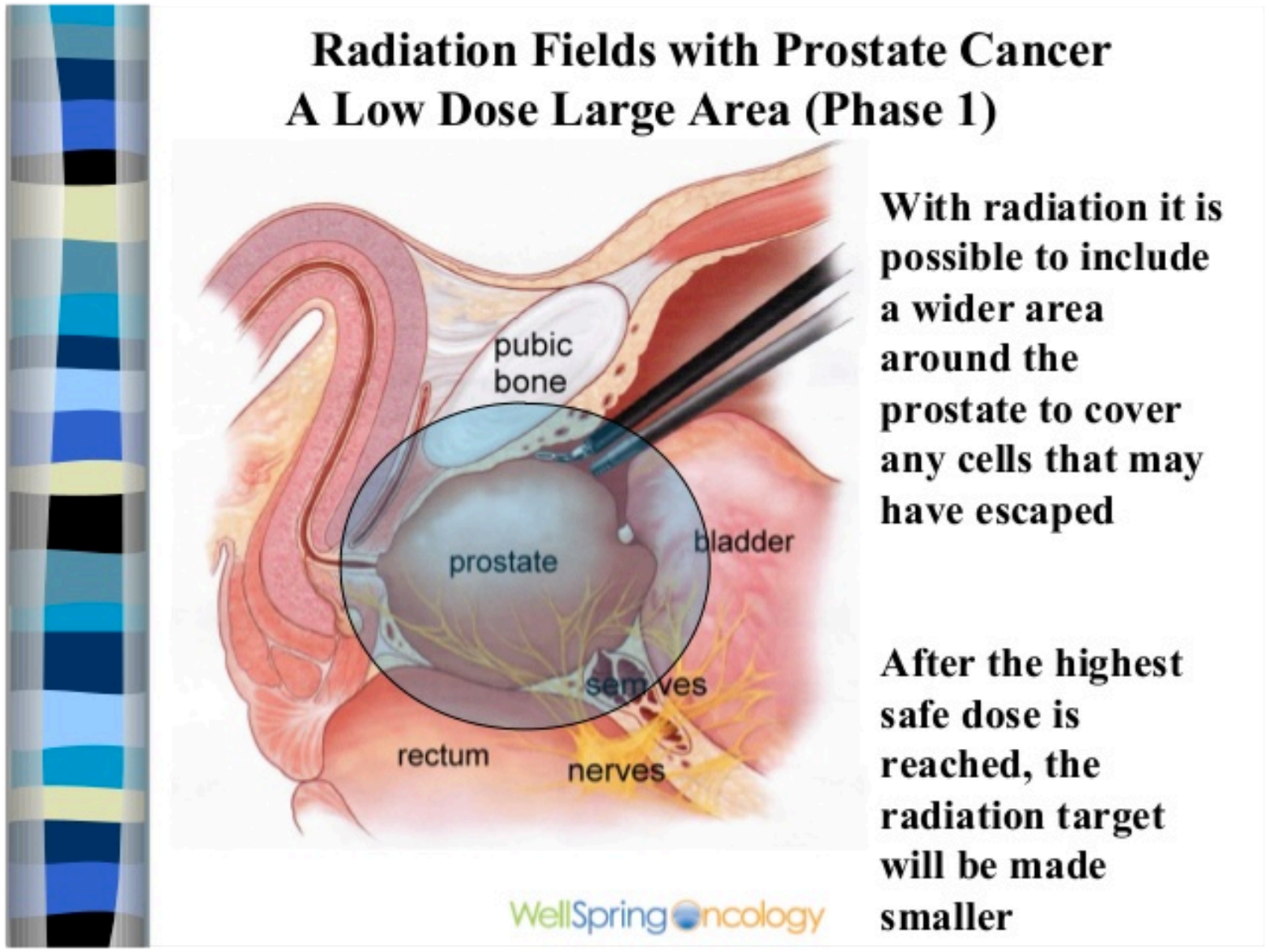
Radical prostatectomy

Total prostatectomy



Consider RPLND (Retroperitoneal Lymph Node Dissection) if pre-operative risk of LN involvement is > 2%

Radiation therapy for prostate cancer



Very Low

Very High

Stage I

Stage III

short life-expectancy (ie, <10y)

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy
Short (4-6 months) Long (2-3 years)

Very Low

Stage I

short life-expectancy (ie, <10y)

Observation

Active surveillance

Low

Radiotherapy

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Very High

Stage III

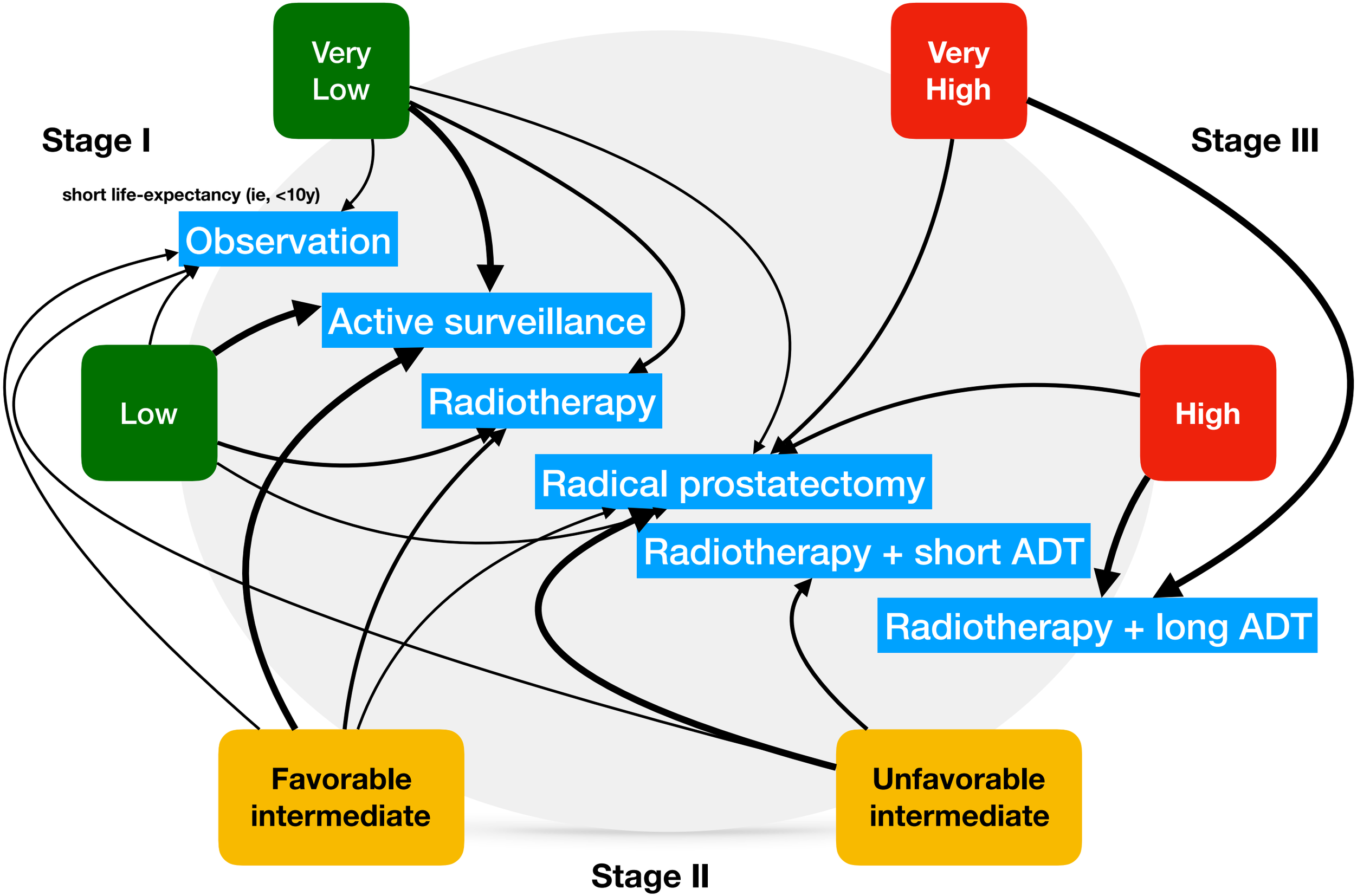
High

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy
Short (4-6 months) Long (2-3 years)



Treatment recommendations by the NCCN, Version 3.2018

ADT: Androgen deprivation therapy
Short (4-6 months) Long (2-3 years)

Very Low

Stage I

Observation

Active surveillance

Low

Radiotherapy

Radical prostatectomy

Very High

Stage III

High

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy
Short (4-6 months) Long (2-3 years)

Preferred recommendations by the NCCN, Version 3.2018

Very Low

Very High

Stage I

Stage III

Observation

Active surveillance

Low

Radiotherapy

High

Radical prostatectomy

Radiotherapy + short ADT

Radiotherapy + long ADT

Favorable intermediate

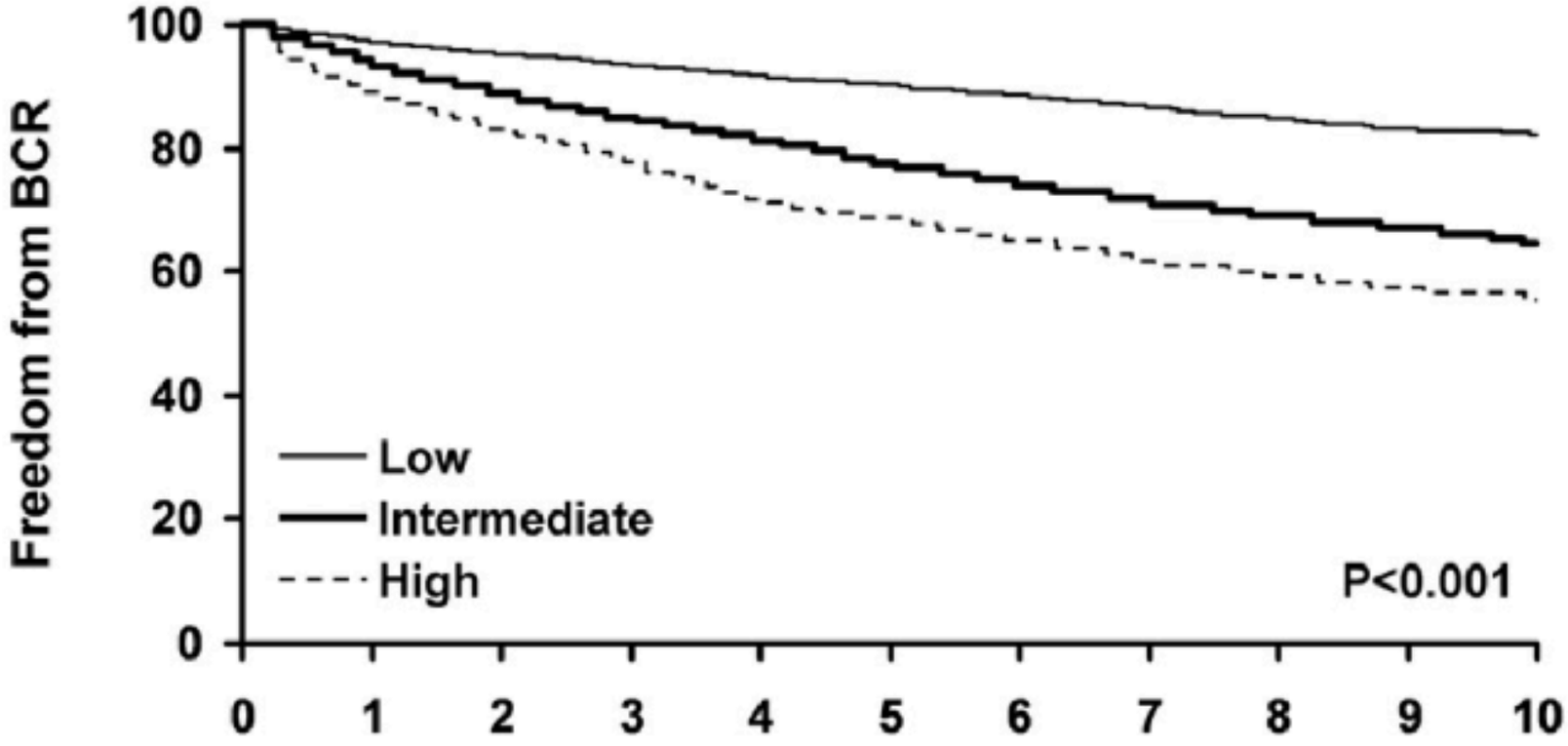
Unfavorable intermediate

Stage II

ADT: Androgen deprivation therapy
Short (4-6 mo), Long (18 mo)

My pattern when *"active surveillance"* may not be feasible

Mayo Clinic Validation of the D'Amico Risk Group Classification for Predicting Survival Following Radical Prostatectomy

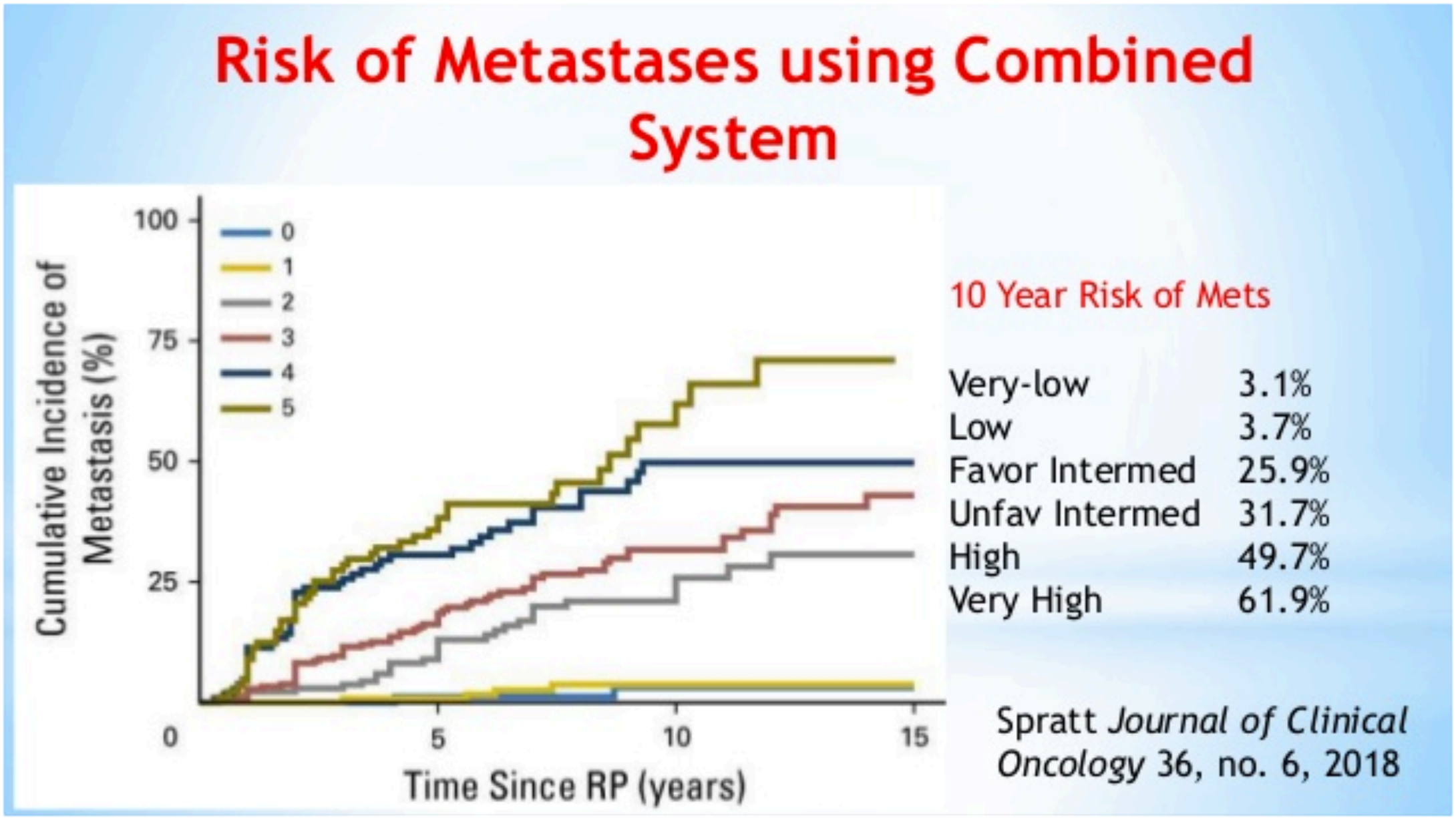


Risk group	No. at risk	% 5-yr survival (no. at risk)	% 10-yr survival (no. at risk)
Low	3,283	90 (2,082)	82 (606)
Intermediate	2,795	78 (1,693)	65 (610)
High	1,513	68 (849)	55 (333)

BCR: biochemical recurrence after radical prostatectomy

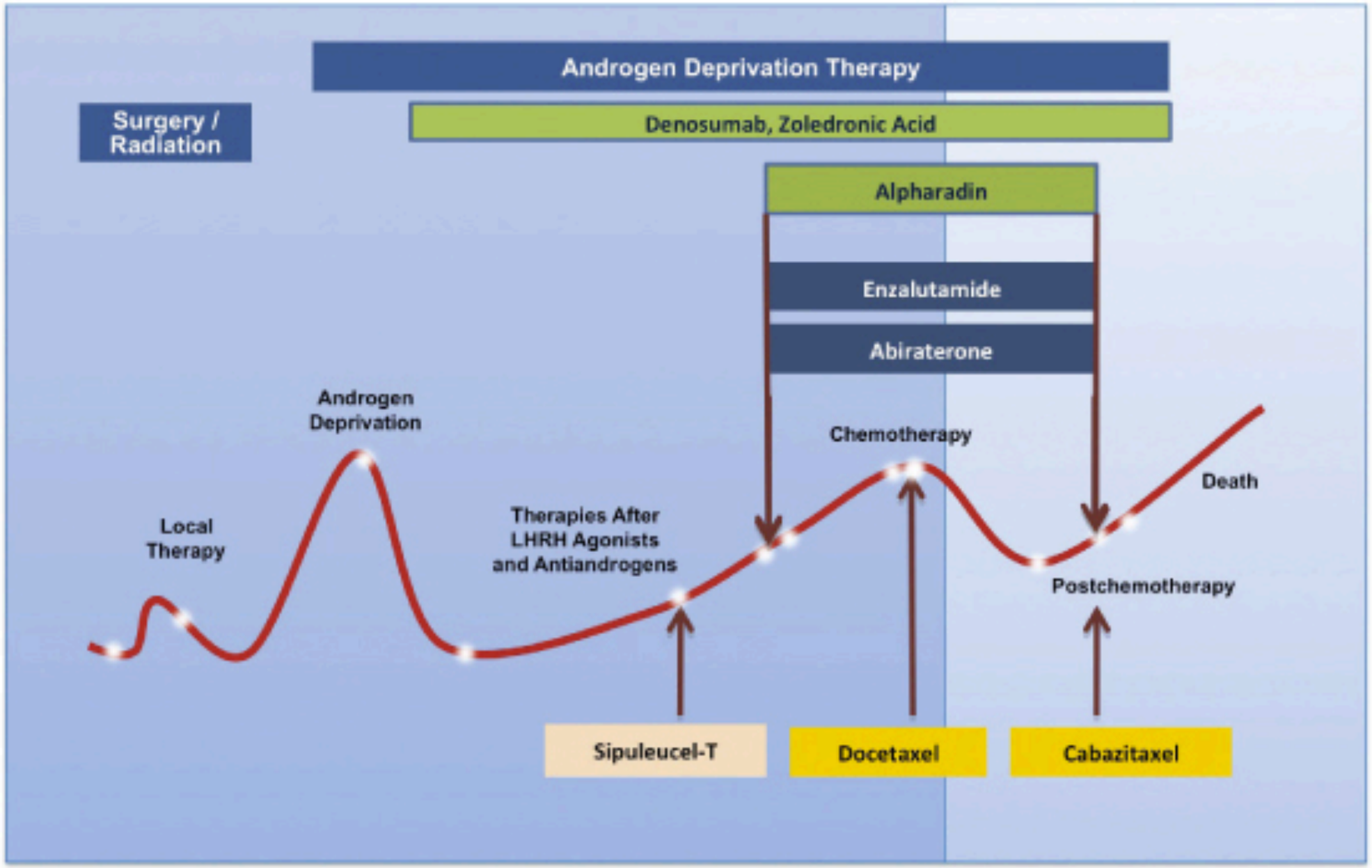
Boorjian SA, Journal of Urology, 2008

Metastasis-free survival after radical prostatectomy by risk group stratification



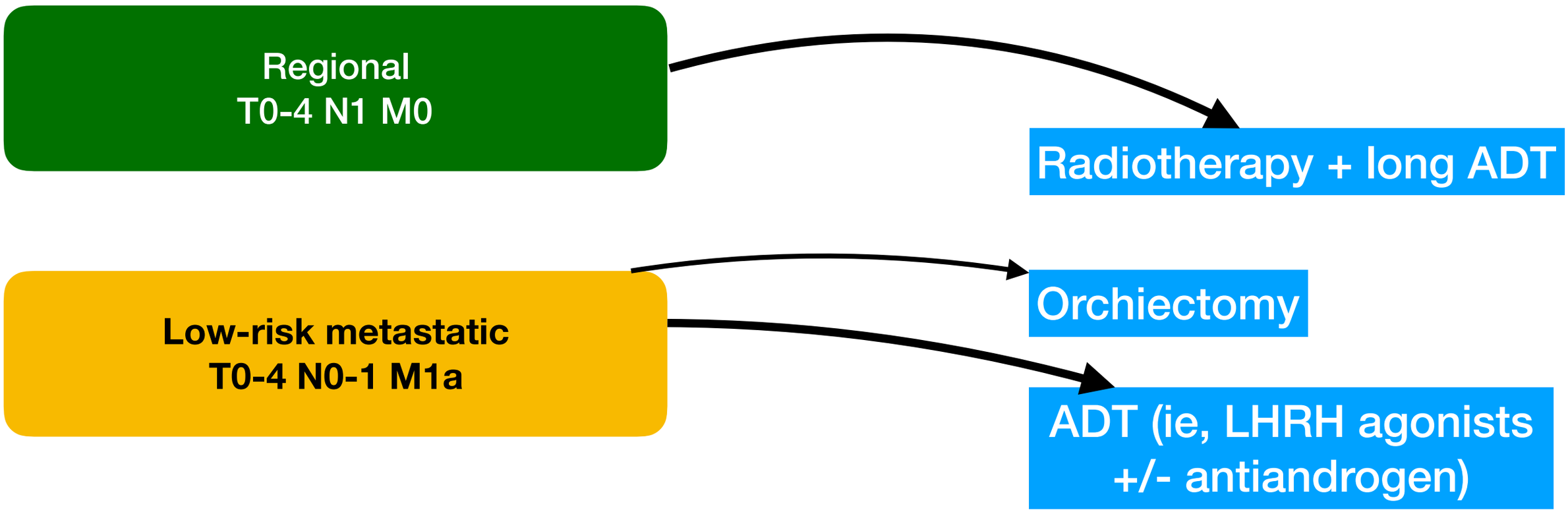
RP: Radical prostatectomy

Treatment Landscape



First-line therapy for advanced prostate cancer

ADT: Androgen deprivation therapy



First-line therapy for advanced prostate cancer

ADT: Androgen deprivation therapy

Regional
T0-4 N1 M0

Radiotherapy + long ADT

Low-risk metastatic
T0-4 N0-1 M1a

Orchiectomy

ADT (ie, LHRH agonists
+/- antiandrogen)

Low-risk metastatic
T0-4 N0-1 M1b
- 3 or less sites of bone metastases

ADT
+ abiraterone + prednisone

ADT + Docetaxel

ADT: Androgen deprivation therapy

Regional
T0-4 N1 M0

Low-risk metastatic
T0-4 N0-1 M1a

Low-risk metastatic
T0-4 N0-1 M1b
- 3 or less sites of bone metastases

High-risk metastatic
T0-4 N0-1 M1b-c
- 4 or more sites of bone metastases -

Radiotherapy + long ADT

Orchiectomy

ADT (ie, LHRH agonists +/- antiandrogen)

ADT
+ abiraterone + prednisone

ADT + Docetaxel

First-line therapy for advanced prostate cancer

ADT: Androgen deprivation therapy

Regional
T0-4 N1 M0

Radiotherapy + long ADT

Low-risk metastatic
T0-4 N0-1 M1a

Orchiectomy

ADT (ie, LHRH agonists
+/- antiandrogen)

Low-risk metastatic
T0-4 N0-1 M1b
- 3 or less sites of bone metastases

ADT
+ abiraterone + prednisone

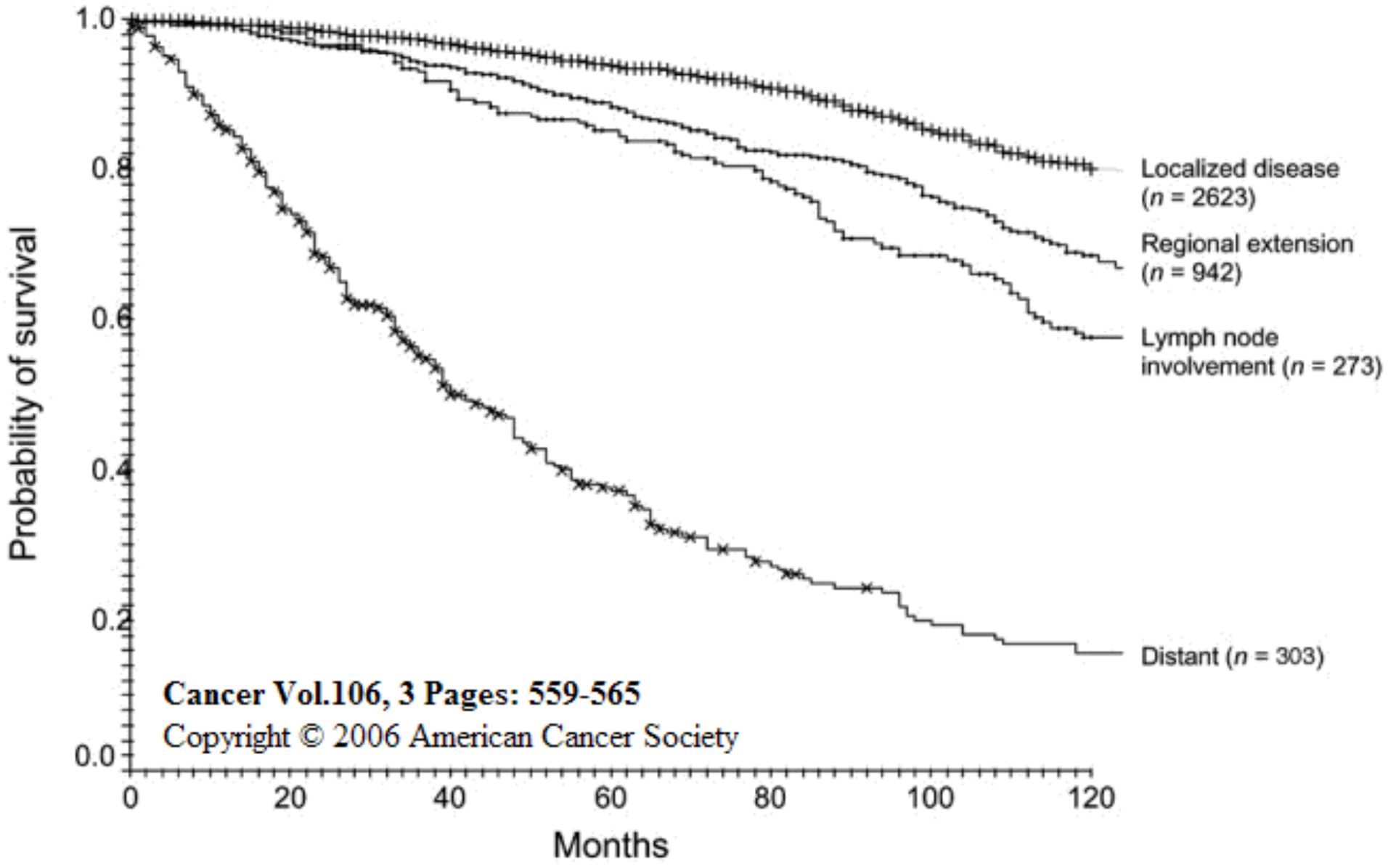
High-risk metastatic
T0-4 N0-1 M1b-c
- 4 or more sites of bone metastases -

ADT + Docetaxel

First-line therapy for advanced prostate cancer

ADT: Androgen deprivation therapy

Overall survival for patients with prostate carcinoma by stage



Cancer Vol.106, 3 Pages: 559-565
Copyright © 2006 American Cancer Society

Tú no las puedes ver;
yo, sí.
Claras, redondas, tibias.
Despacio
se van a su destino;
despacio, por marcharse
más tarde de tu carne.
Se van a nada; son
eso no más, su curso.
Y una huella, a lo largo,
que se borra en seguida.
¿Astros?

Tú
no las puedes besar.
Las beso yo por ti.
Saben; tienen sabor
a los zumos del mundo.
¡Qué gusto negro y denso
a tierra, a sol, a mar!
Se quedan un momento
en el beso, indecisas
entre tu carne fría
y mis labios; por fin
las arranco. Y no sé
si es que eran para mí.
Porque yo no sé nada.
¿Son estrellas, son signos,
son condenas o auroras?
Ni en mirar ni en besar
aprendí lo que eran.
Lo que quieren se queda
allá atrás, todo incógnito.
Y su nombre también.

(Si las llamara lágrimas, nadie me entendería.)

Pedro Salinas