Hormonotherapie in de oncologie

Impact van hormonale therapie in de oncologie bij de behandeling van het prostaatcarcinoom: indicaties, voordelen & nadelen

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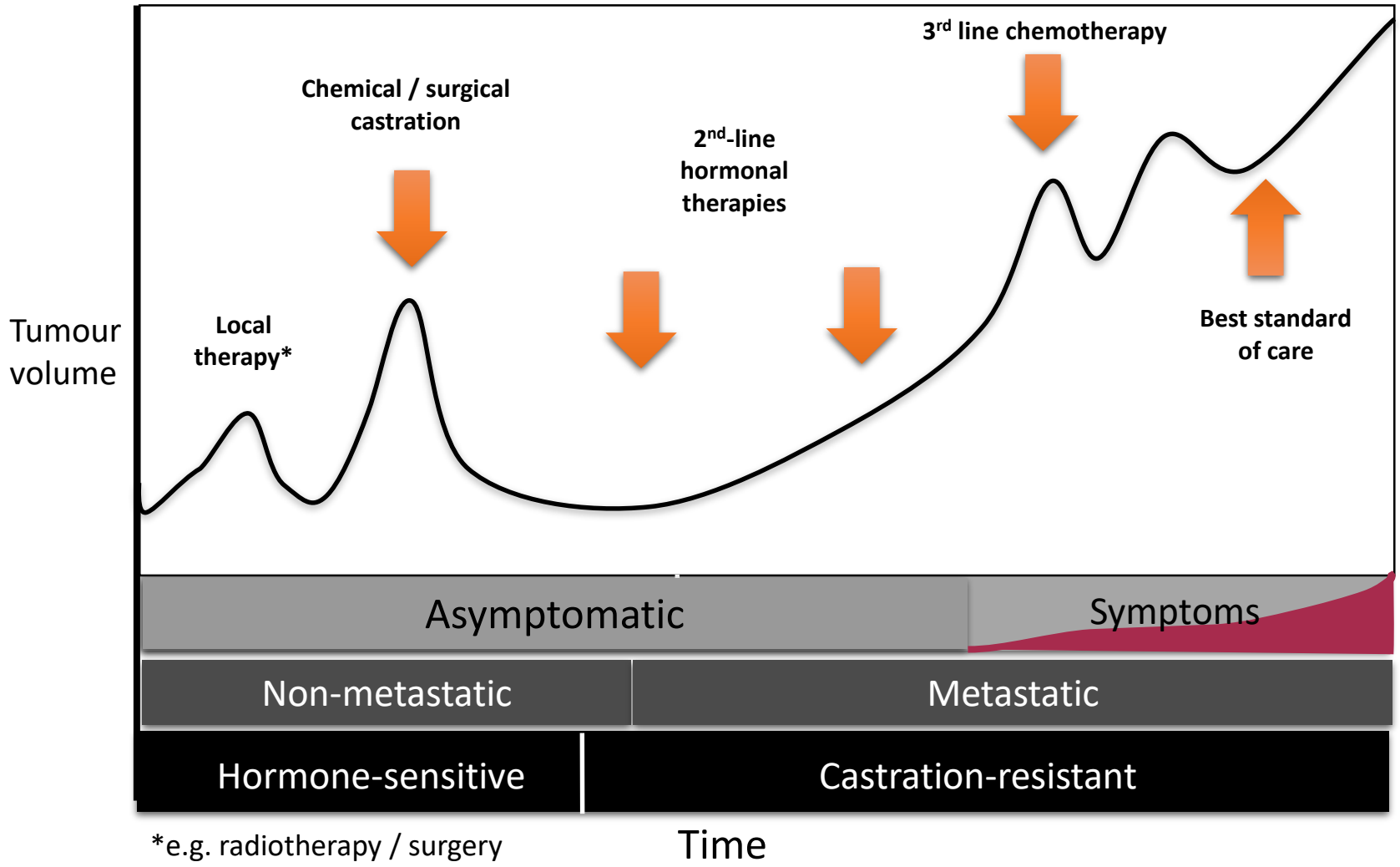
Alumni avondcolloquia
1/03/2023

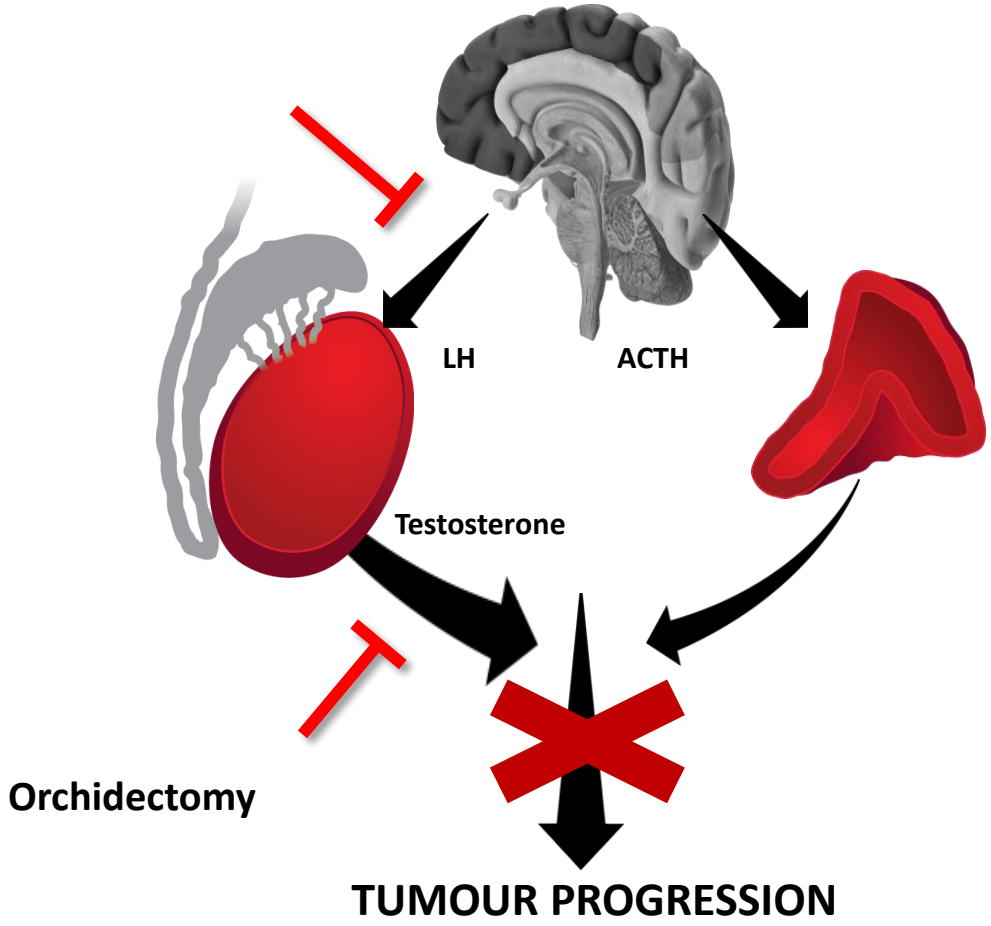
INLEIDING

Prostaatkanker: continuum van verschillende stadia



1. Yap TA et al. Nat Rev Clin Oncol 2011;8:597-610; 2. Beltran H et al. Eur Urol 2011;60:279-90; 3. Montzka K, Heidenreich A. Ann Urol 2010;1:29-33; 4. GLOBOCAN Cancer Fact Sheet 2008: Prostate cancer. Available at: http://globocan.iarc.fr.

Hormonale therapie = hoeksteen van de therapie



Door de hormonale therapie daalt het testosterone met 90-95%

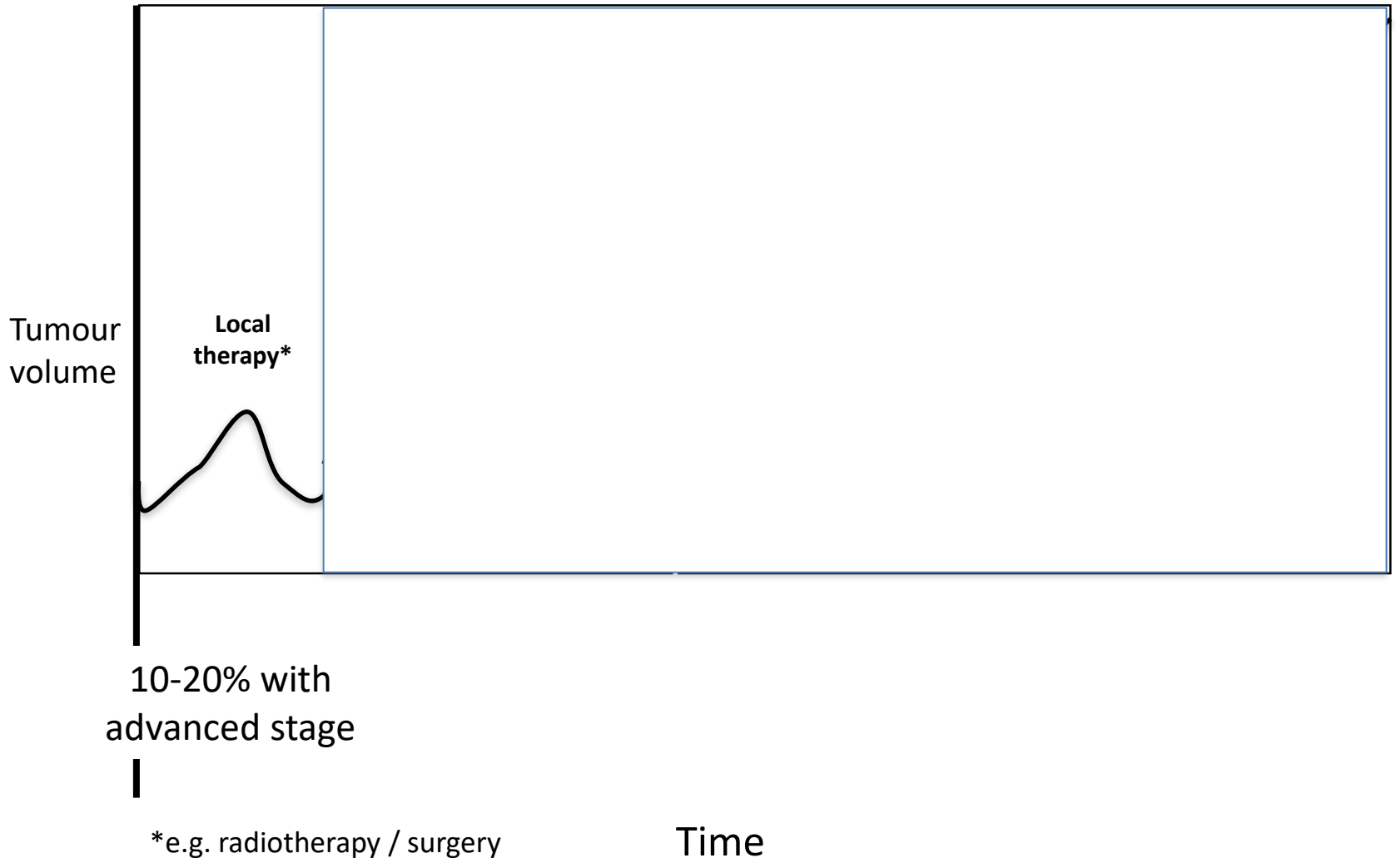
Kohli M, Tindall DJ. Mayo Clin Proc 2010;85:77-86

‘EERSTE’ LIJNS HORMONALE THERAPIE

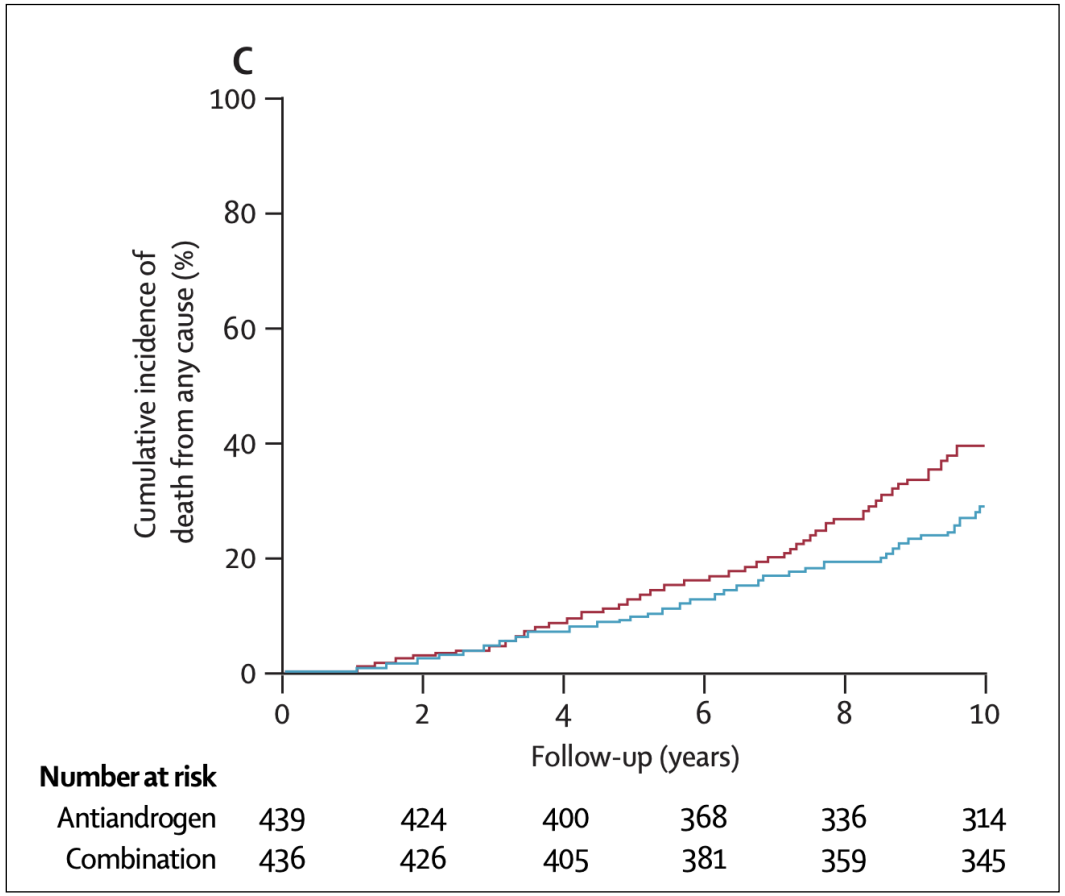
‘EERSTE’ LIJNS HORMONALE THERAPIE

INDICATIES

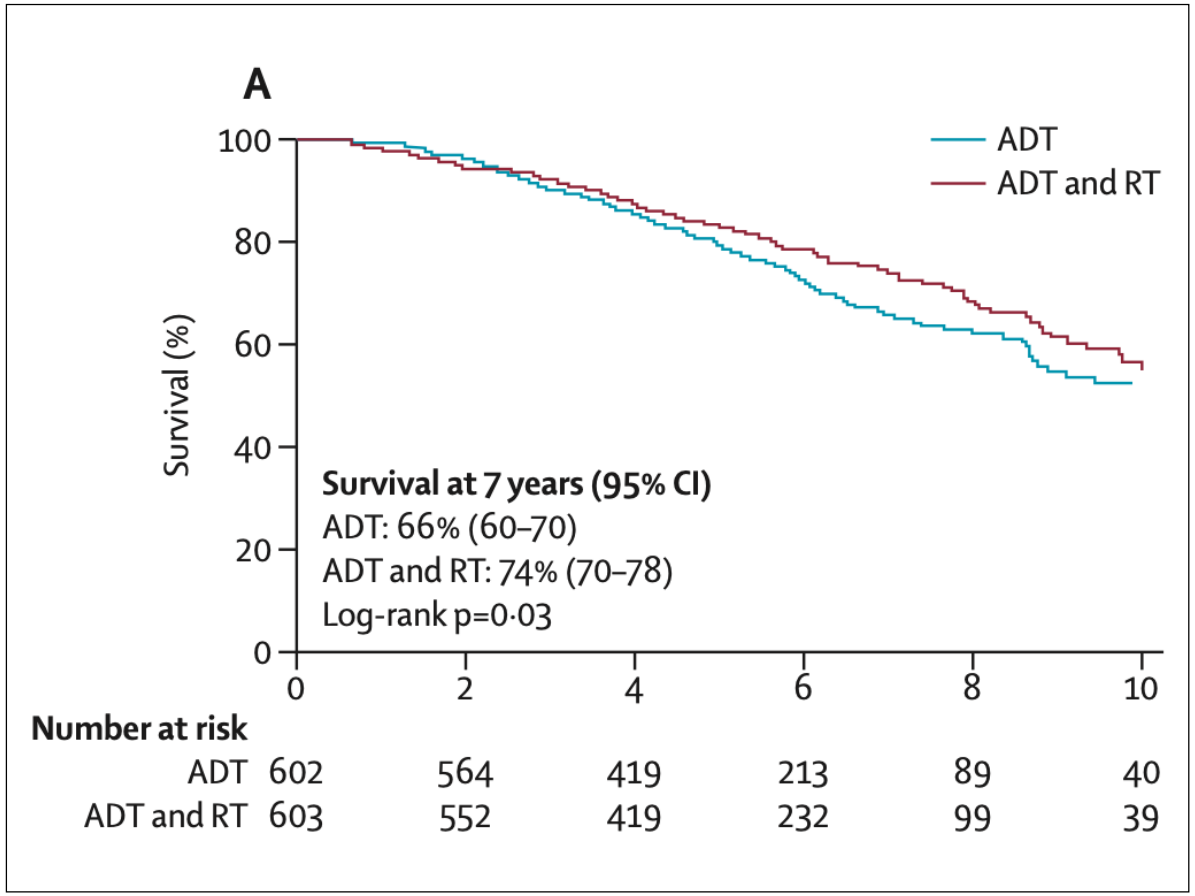
Prostaatkanker: continuum van verschillende stadia



Kohli M, Tindall DJ. Mayo Clin Proc 2010;85:77-86



Widmark et al. Lancet 2009



Warde et al. Lancet 2011

SPCG7

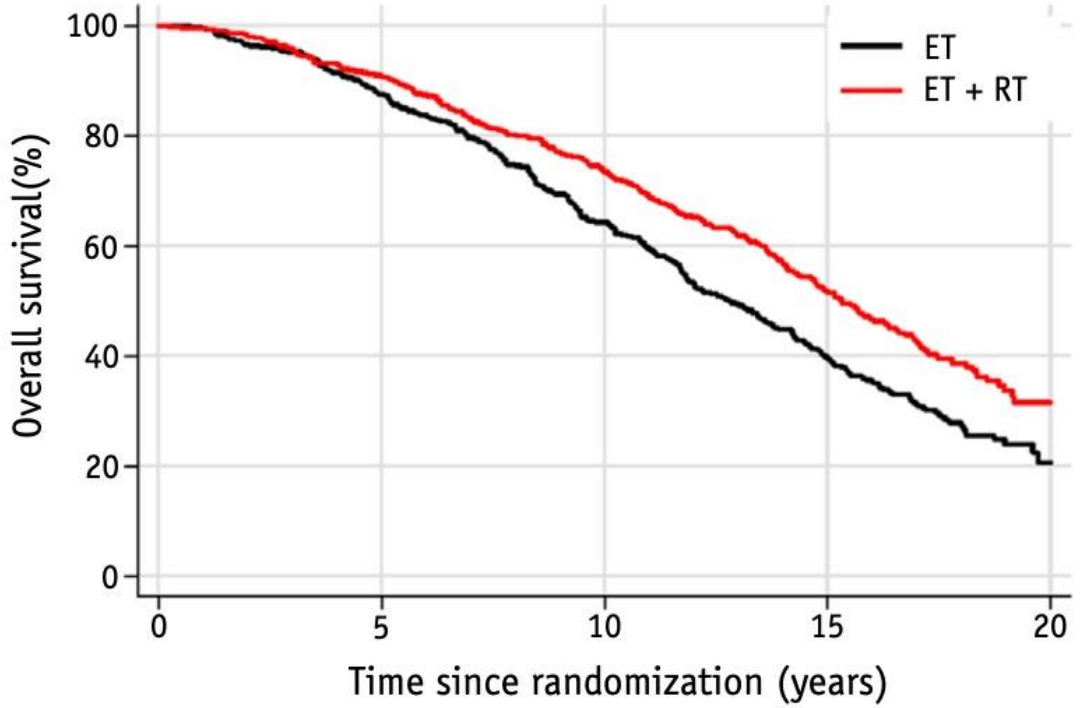


Fig. 4. Overall survival, all patients (n = 860). Abbreviations: ET = hormone therapy; RT = radiation therapy.

Aksnessaether et al. Int J Radiat Oncol Biol Phys 2020

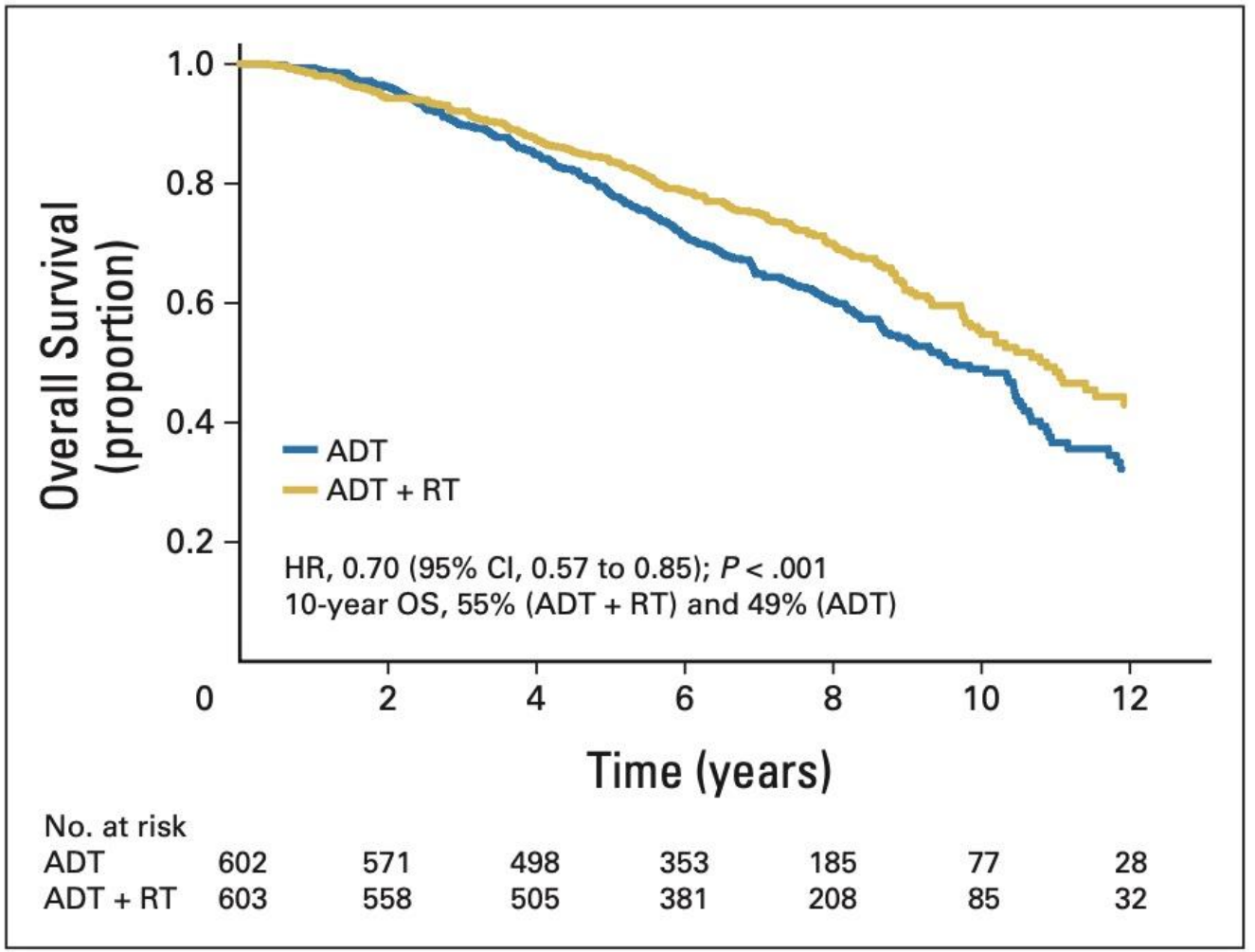


Fig 2. Overall survival (OS). ADT, androgen-deprivation therapy; HR, hazard ratio; RT, radiotherapy.

Mason et al. JCO 2015

Bolla RT +/- ADT

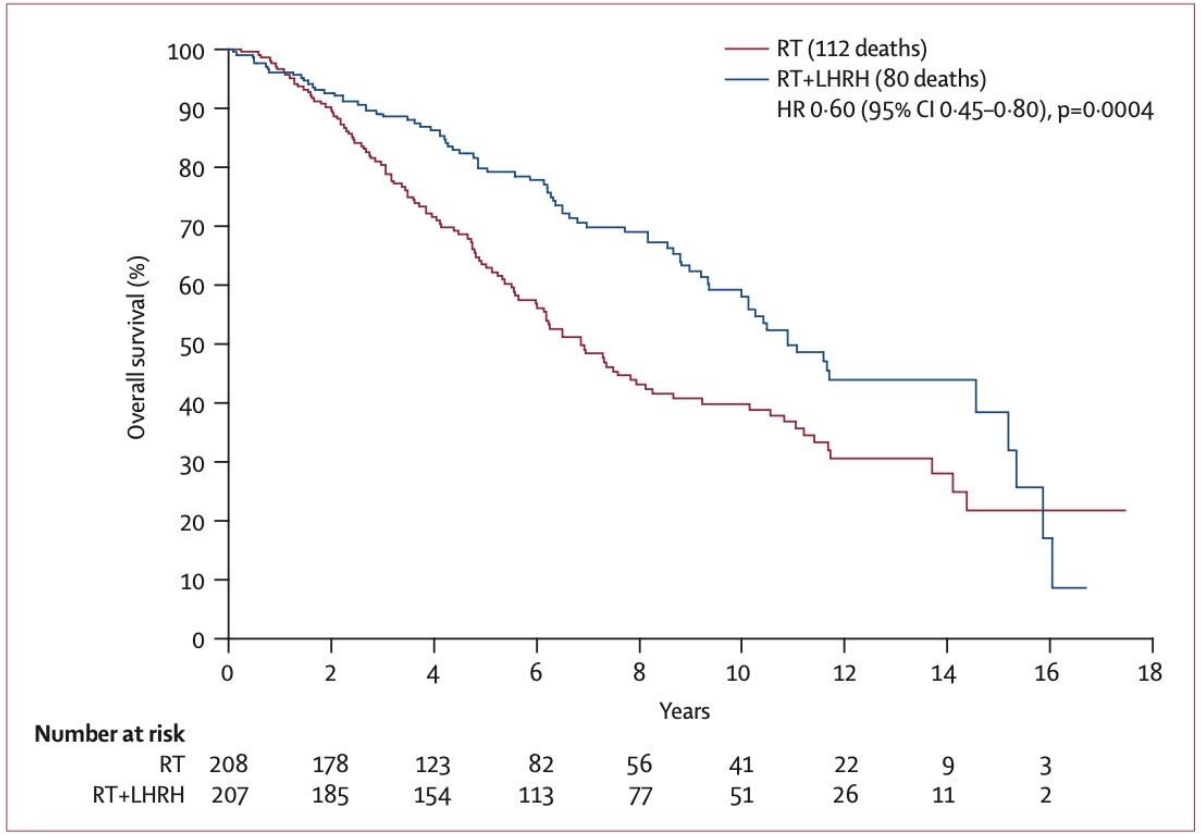


Figure 3: **Overall survival**
RT=radiotherapy. LHRH=luteinising-hormone-releasing hormone.

	Radiation only (N=208)	Radiation plus androgen suppression (N=207)
Any clinical progression	104 (50%)	44 (21%)
Local	19 (9%)	9 (4%)
Local and regional	3 (1%)	0
Distant progression	58 (28%)	31 (15%)
Local and distant	20 (10%)	4 (2%)
Local, regional, and distant	4 (2%)	0

Data are number (%).

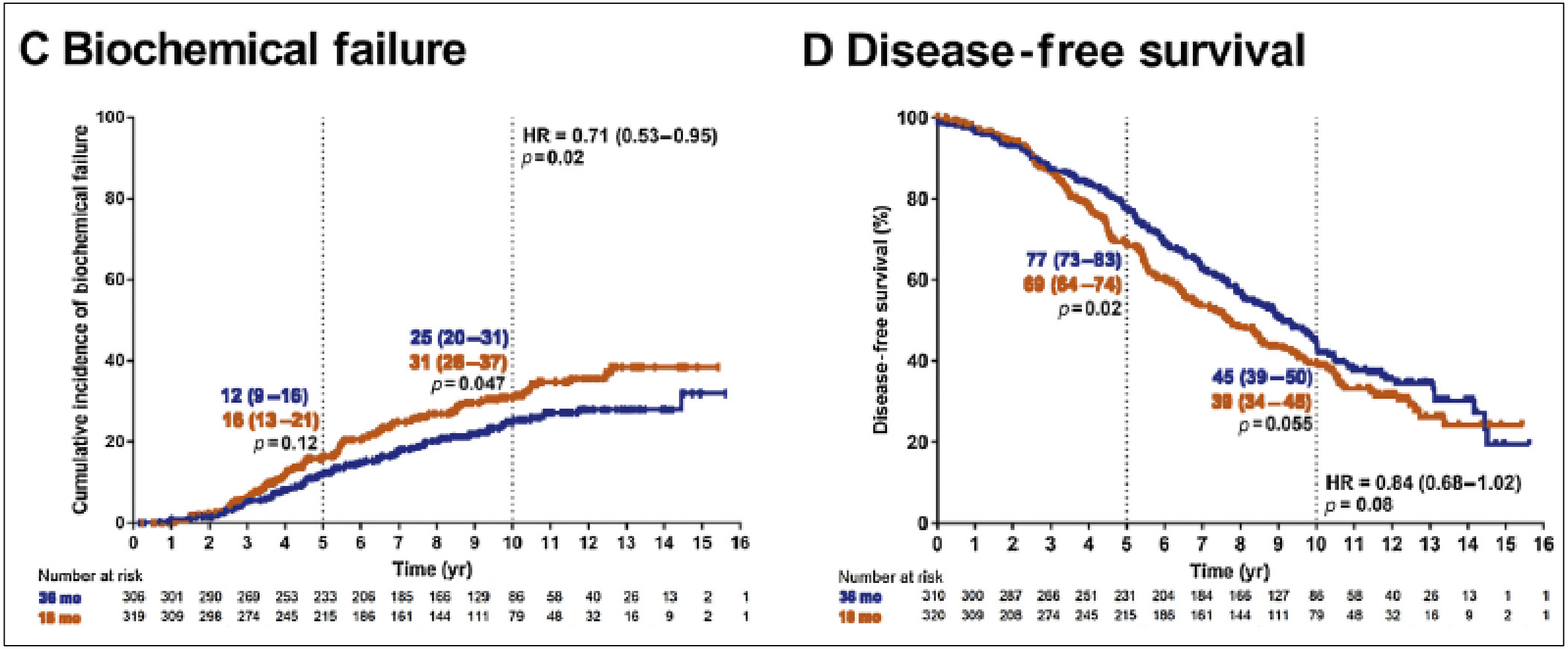
Table 2: **Sites of disease progression**

Bolla et al. Lancet Oncology 2011

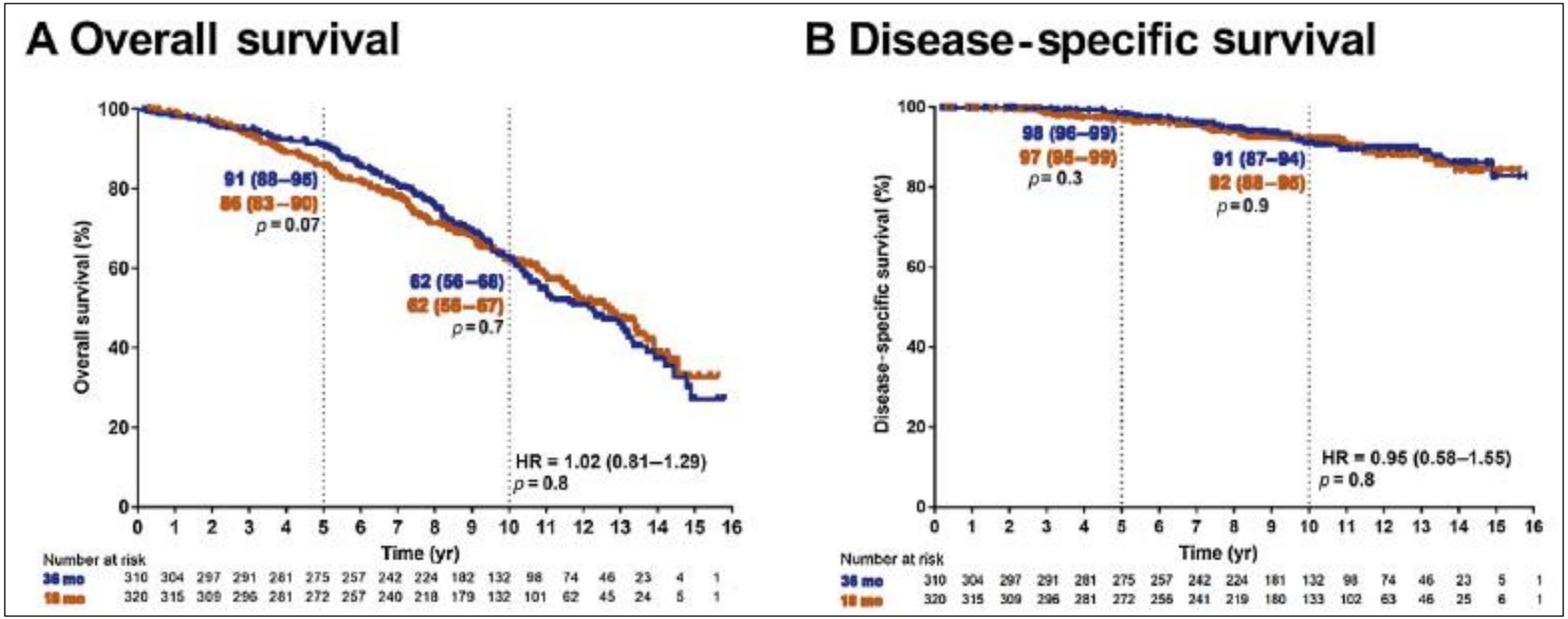
630 patients randomized

Long arm (36 mo): 310 patients

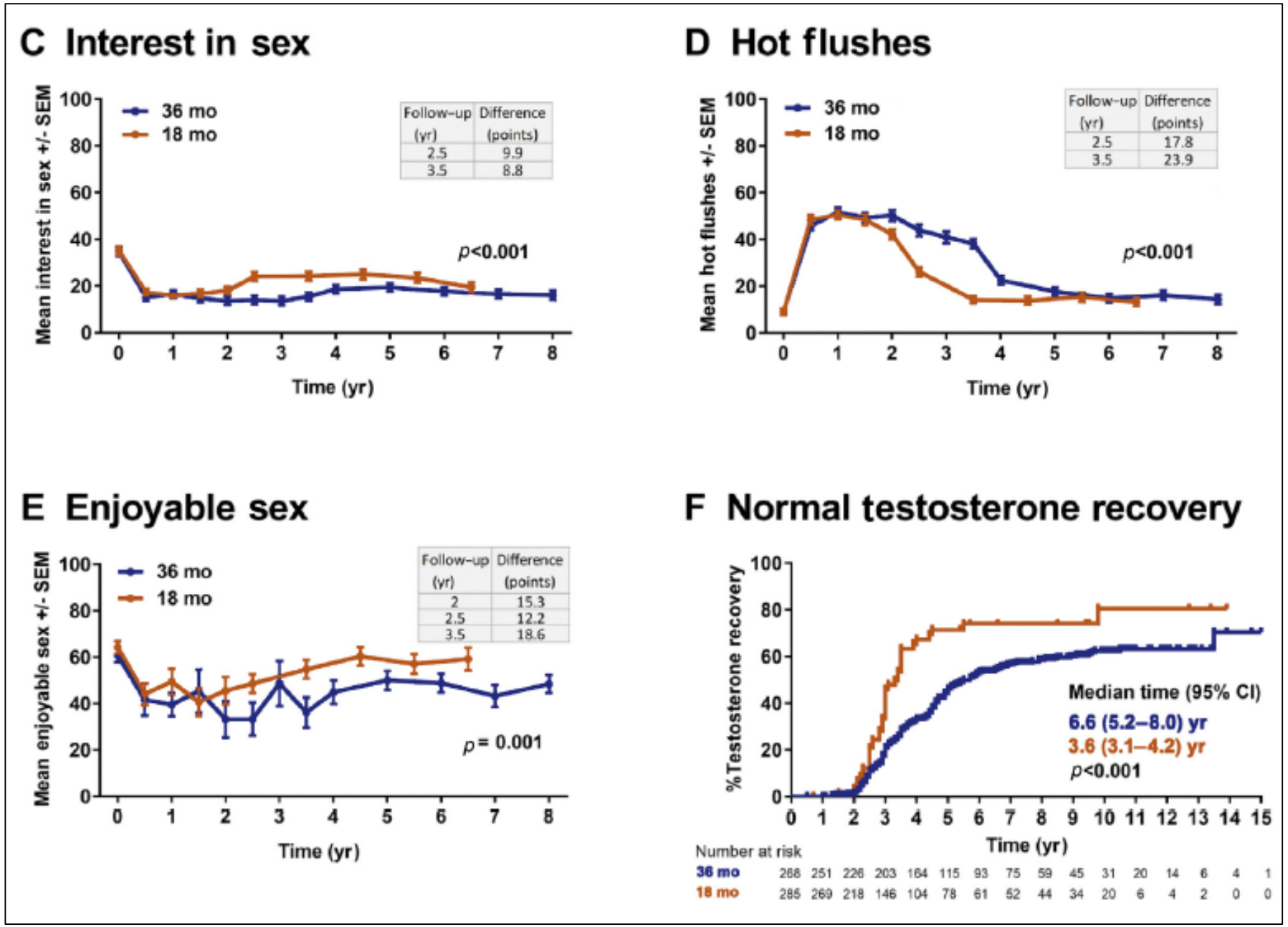
Short arm (18 mo): 320 patients



Nabid et al, Eur Urol 2018



Nabid et al, Eur Urol 2018

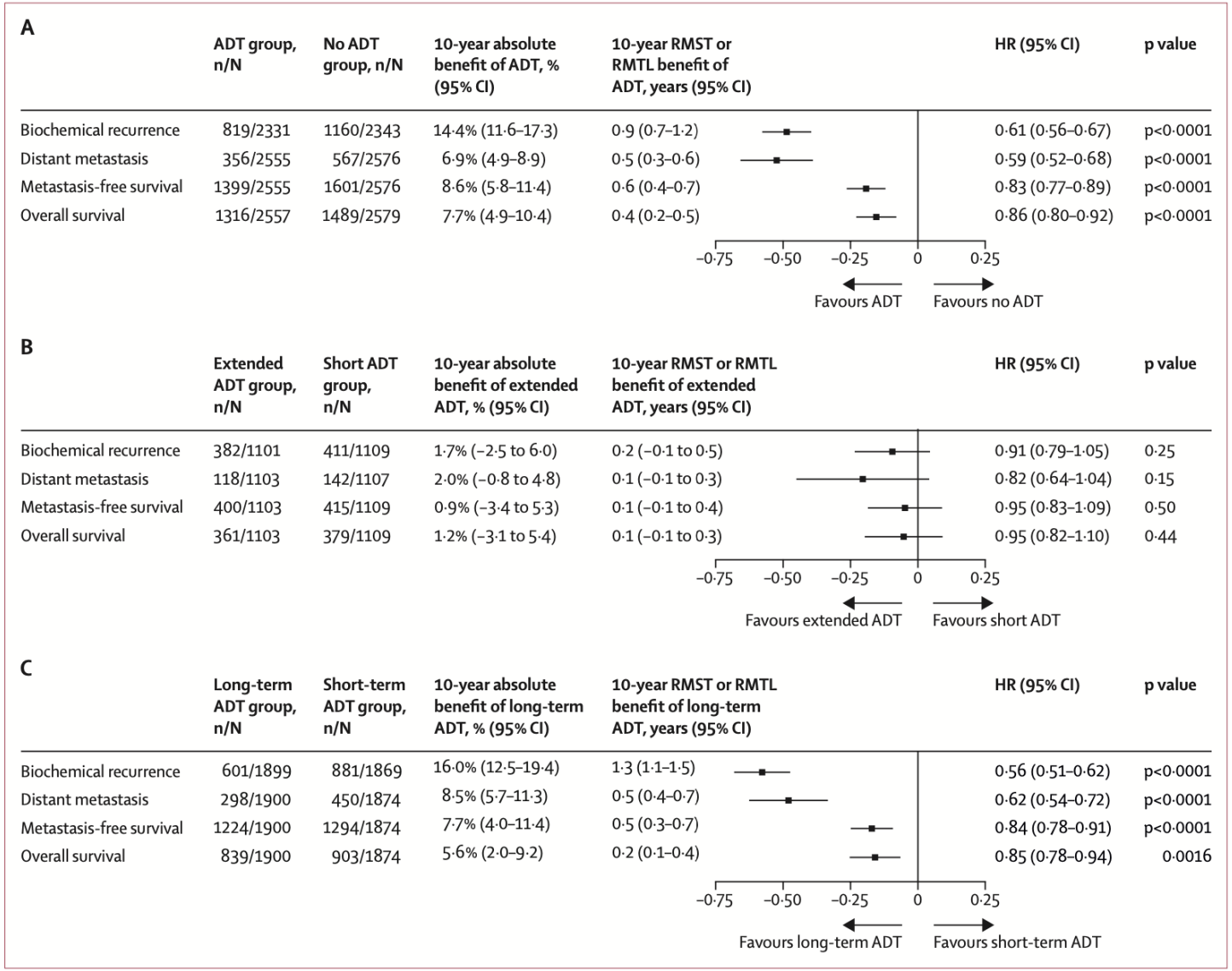


Nabid et al, Eur Urol 2018

Hormonale therapie

Neo-adjuvante hormonale therapie

Adjuvante hormonale therapie



A

	ADT group, n/N	No ADT group, n/N	10-year absolute benefit of ADT, % (95% CI)	10-year RMST or RMTL benefit of ADT, years (95% CI)	HR (95% CI)	p value
Biochemical recurrence	819/2331	1160/2343	14·4% (11·6–17·3)	0·9 (0·7–1·2)	0·61 (0·56–0·67)	p<0·0001
Distant metastasis	356/2555	567/2576	6·9% (4·9–8·9)	0·5 (0·3–0·6)	0·59 (0·52–0·68)	p<0·0001
Metastasis-free survival	1399/2555	1601/2576	8·6% (5·8–11·4)	0·6 (0·4–0·7)	0·83 (0·77–0·89)	p<0·0001
Overall survival	1316/2557	1489/2579	7·7% (4·9–10·4)	0·4 (0·2–0·5)	0·86 (0·80–0·92)	p<0·0001

B

	Extended ADT group, n/N	Short ADT group, n/N	10-year absolute benefit of extended ADT, % (95% CI)	10-year RMST or RMTL benefit of extended ADT, years (95% CI)	HR (95% CI)	p value
Biochemical recurrence	382/1101	411/1109	1·7% (−2·5 to 6·0)	0·2 (−0·1 to 0·5)	0·91 (0·79–1·05)	0·25
Distant metastasis	118/1103	142/1107	2·0% (−0·8 to 4·8)	0·1 (−0·1 to 0·3)	0·82 (0·64–1·04)	0·15
Metastasis-free survival	400/1103	415/1109	0·9% (−3·4 to 5·3)	0·1 (−0·1 to 0·4)	0·95 (0·83–1·09)	0·50
Overall survival	361/1103	379/1109	1·2% (−3·1 to 5·4)	0·1 (−0·1 to 0·3)	0·95 (0·82–1·10)	0·44

C

	Long-term ADT group, n/N	Short-term ADT group, n/N	10-year absolute benefit of long-term ADT, % (95% CI)	10-year RMST or RMTL benefit of long-term ADT, years (95% CI)	HR (95% CI)	p value
Biochemical recurrence	601/1899	881/1869	16·0% (12·5–19·4)	1·3 (1·1–1·5)	0·56 (0·51–0·62)	p<0·0001
Distant metastasis	298/1900	450/1874	8·5% (5·7–11·3)	0·5 (0·4–0·7)	0·62 (0·54–0·72)	p<0·0001
Metastasis-free survival	1224/1900	1294/1874	7·7% (4·0–11·4)	0·5 (0·3–0·7)	0·84 (0·78–0·91)	p<0·0001
Overall survival	839/1900	903/1874	5·6% (2·0–9·2)	0·2 (0·1–0·4)	0·85 (0·78–0·94)	0·0016

Figure 3: **Forest plots showing effects of ADT use (A), neoadjuvant ADT extension (B), and adjuvant ADT prolongation (C) on biochemical recurrence, distant metastasis, metastasis-free survival, and overall survival**

ADT=androgen deprivation therapy. HR=hazard ratio. RMST=restricted mean survival time. RMTL=restricted mean time lost.

Kishan et al, Lancet Oncology 2022

DADSPORT

Trial	Accrual period	Number of men	Duration of HT
GETUG-AFU 16 (Carrie et al 2016, 2019)	2006-2010	743	None vs 6m
NRG/RTOG 0534 (Pollack et al 2022)	2008-2015	1142	None vs 6m
NRG/RTOG 9601 (Shipley et al 2017, Dess et al 2020)	1998-2003	760	None vs 24m
RADICALS-HD (Unpublished)	2007-2015	2839	None vs 6m None vs 6m vs 24m 6m vs 24m

3 trial comparisons - None vs 6m HT, 3364 men

2 trial comparisons - None vs 24m HT, 1088 men

Urotoday.com

APCCC 2022

Grade Group (GS)	Pre-SRT PSA (ng/mL)			
	0.1-0.49	0.5-0.99	1.0-1.5	>1.5
1 (6)	RT alone (+STADT if Int-High GC or neg margin and multiple high RF)	RT + STADT	RT + STADT (Discuss LTADT if Int-High GC or multiple high RF)	RT + STADT (+LTADT if High GC and multiple high RF)
2, 3 (7)	RT alone if pos margin or low GC (+STADT if Int-High GC or multiple high RF)	RT + STADT	RT + STADT (Discuss LTADT if High GC or multiple risk factors)	RT + LTADT (STADT if pos margin and low GC)
4,5 (8-10)	RT + STADT (consider RT alone if low GC & only 1 high RF)	RT + STADT (Discuss LTADT with neg margins & multiple high RF)	RT + LTADT (Discuss STADT if margin positive & low GC; consider systemic therapy intensification with multiple high RF)	RT + LTADT (consider systemic therapy intensification with multiple high RF)

Clinical Trial Preferred Approach Whenever Possible

‘EERSTE’ LIJNS HORMONALE THERAPIE

BIJWERKINGEN

1) CARDIOVASCULAIR

- LHRH agonisten (Decapeptyl, Depo-Eligard, Zoladex):

  - ↑ LDL
  - ↑ triglyceriden
  - ↑ visceraal vet
  - ↑ insuline resistentie
  - ↓ glucose tolerantie

Induceren atherosclerose en coronair lijden

≈ thrombo-embolische events, AMI, hartfalen, arythmie

Turco et al, Research and reports in urology, 2023

1) CARDIOVASCULAIR

- RR op cardiovasculair event: 0.93-1.37
- ! Voorgeschiedenis van cardiovasculaire events
- Antagonisten (Firmagon): potentieel een lager riscio

Turco et al, Research and reports in urology, 2023

PREVENTIE: CARDIOVASCULAIR

VOOR START HORMONALE THERAPIE:

- Navragen of er cardiovasculaire events zijn geweest
- Labo: lipiden en glycemie
- ECG
- Bloeddruk
- BMI

Turco et al, Research and reports in urology, 2023

2) BOTDENSITEIT

- ↑ botresorptie
- ↑ osteoclasten actvivatie

Verlies in BMD van 4-6%/jaar met een sneller verlies eerste jaar van hormonale therapie

- Kwalitatieve schade thv de trabeculaire microstructuur

Turco et al, Research and reports in urology, 2023

2) BOTDENSITEIT

- RR op fractuur: 1.23
- RR op heupfractuur met nood aan hospitalisatie: 1.82

Turco et al, Research and reports in urology, 2023

PREVENTIE: BOTDENSITEIT

VOOR START HORMONALE THERAPIE:

- Start Calcium (1200 mg/dag) + Vitamine D (800-2000 IU/dag
- Aanpassingen levensstijl: rookstop, verminderde alcochol inname, meer fysieke activiteit
- Overweeg gebruik van botversterkers bij:
  - T score <2 of ≥ 2 risico factoren (> 65 jaar, T score < -1.5, roker, BMI < 24, familiale VG van heupfractuur, inname van glucocorticoiene > 6 maanden)

Turco et al, Research and reports in urology, 2023

PREVENTIE: BOTDENSITEIT

Tijdens en na HORMONALE THERAPIE:

- Botdensitometrie alle 1-2 jaar zolang onder hormonale therapie
- Na afwerken van hormonale therapie: nieuwe botdensitometrie

Turco et al, Research and reports in urology, 2023

3) COGNITIEVE STOORNISSEN

- ↓ concentratie
- Geheugenstoornissen
- Dementie
- Depressie

Turco et al, Research and reports in urology, 2023

PREVENTIE: COGNITIEVE STOORNISSEN

VOOR START HORMONALE THERAPIE:

- Screening voor cognitieve dysfunctie
- Psychiatrische of geriatrisch evaluatie zo VG van depressie of dementie
- Monitoring van cogintieve functies

Turco et al, Research and reports in urology, 2023

4) Hot flashes

- Verstoring in thermoregulatie systeem

Turco et al, Research and reports in urology, 2023

PREVENTIE: HOT FLASHES

- Vemijden van te heet of gekruid eten
- Hormonale theapie ovv megestrol of cyproterone acetate
- Gabapentine, venlafaxine of acupunctuur
- Salie

Turco et al, Research and reports in urology, 2023

5) Vermoeidheid en anemie

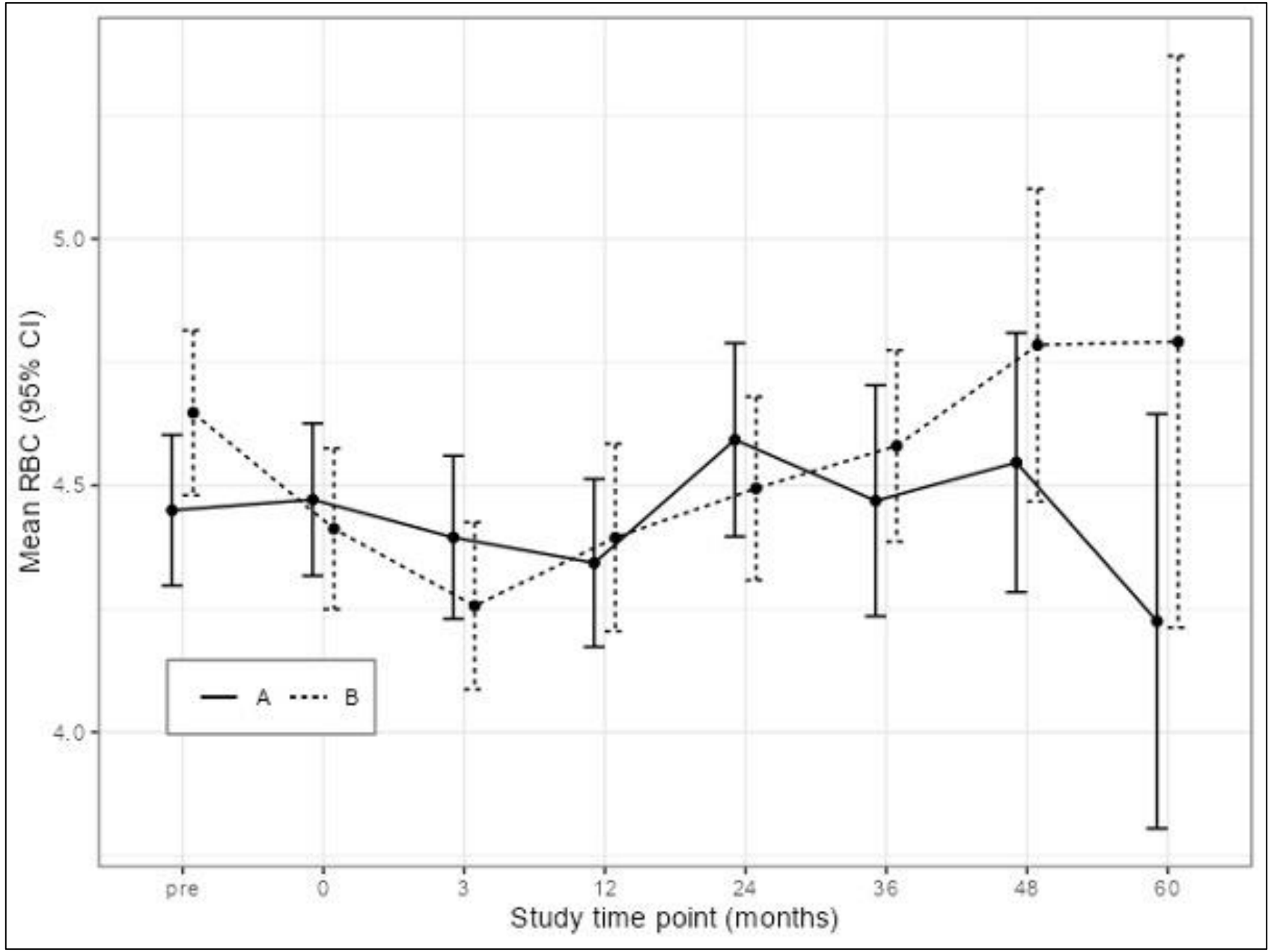
- ↓ testosteron geinduceerde erythropoiesis
- ↓ testosteron geinduceerde renale productie van erythropoietine

Turco et al, Research and reports in urology, 2023

PREVENTIE: VERMOEIDHEID EN ANEMIE

- Fysieke activiteit en dieet
- Behandel andere oorzaken van anemie
- Monitor Hb levels

Turco et al, Research and reports in urology, 2023



Fonteyne et al, in press 2023

6) Potentie en erectieverlies

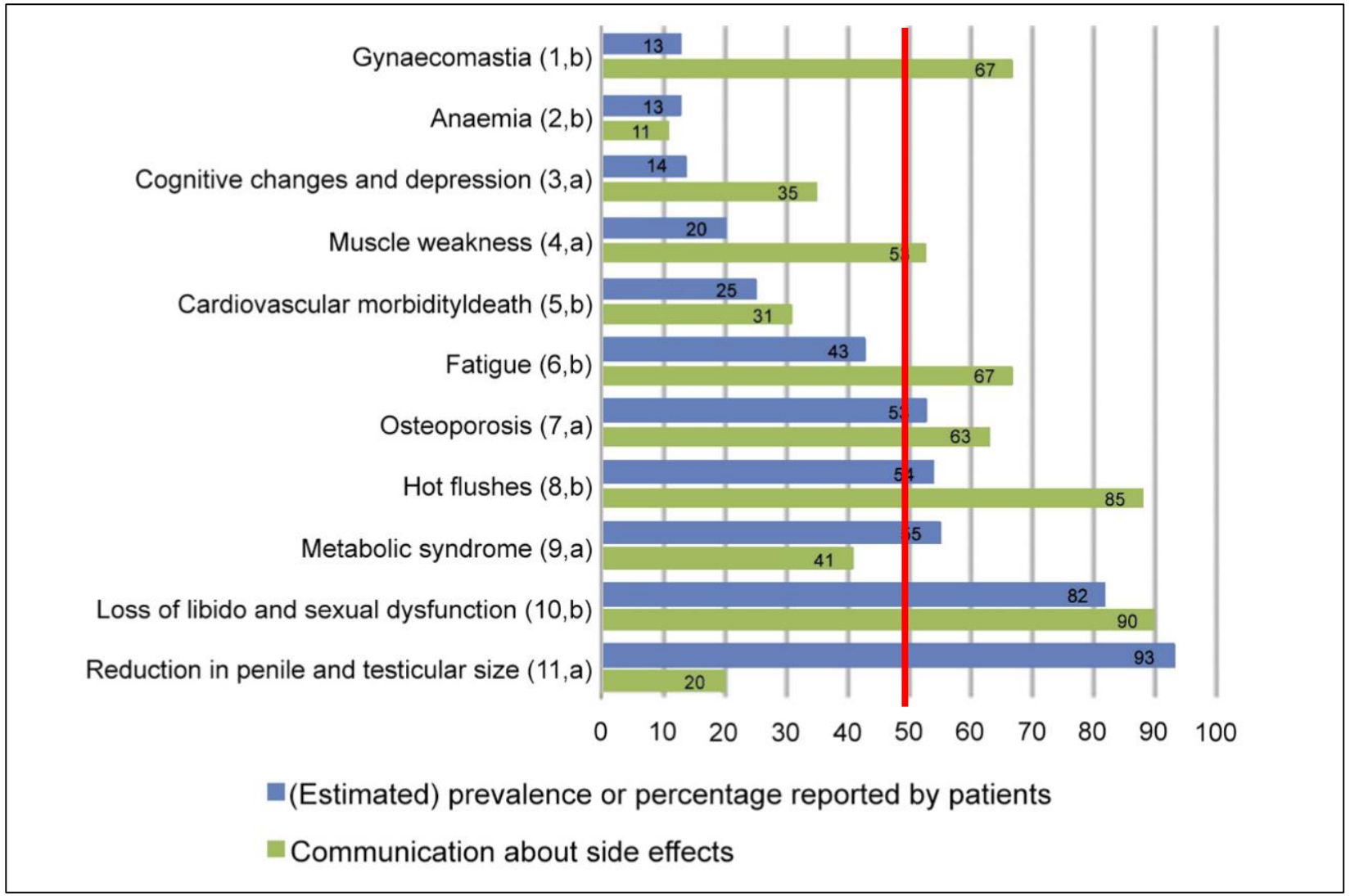
- ↓ peniele en testiculaire grootte
- Verlies libido
- ↓ gevoeligheid voor sexuele prikkels
- Erectiele dysfunctie

Turco et al, Research and reports in urology, 2023

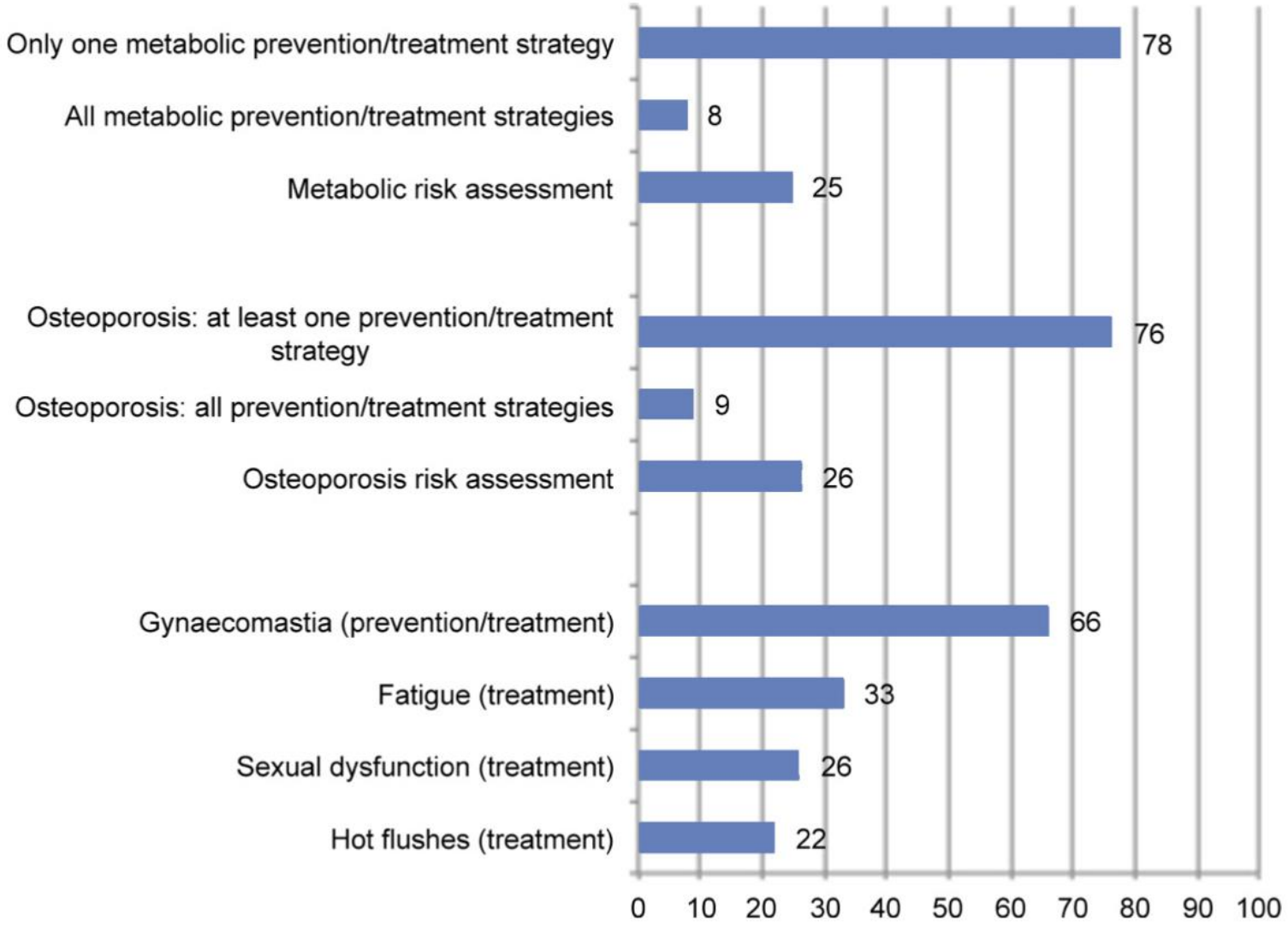
PREVENTIE: POTENTIE EN ERECTIEVERLIES

- Counselling
- Overweeg psychologische hulp
- Overweeg intermittente hormonale therapie

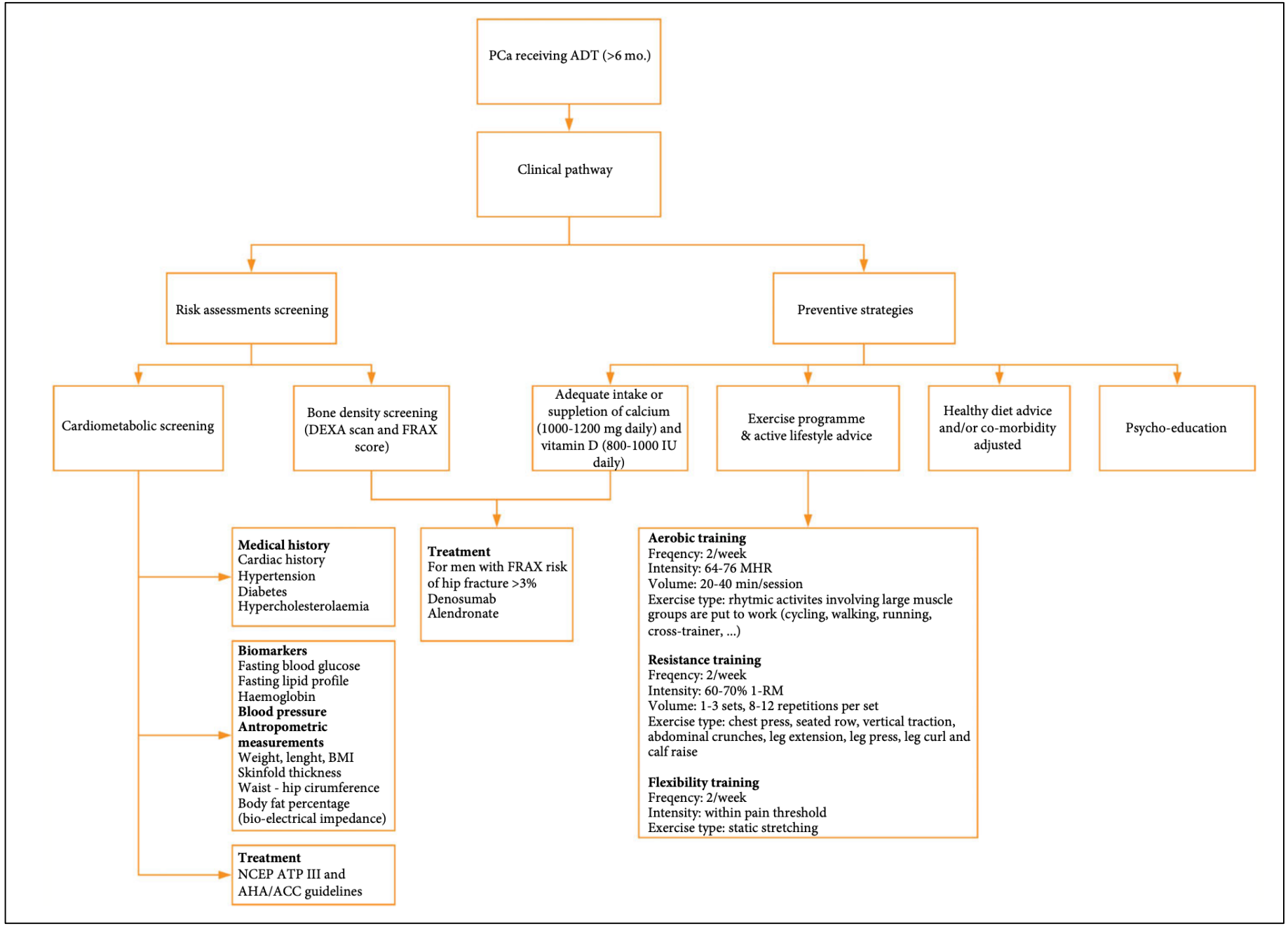
Turco et al, Research and reports in urology, 2023



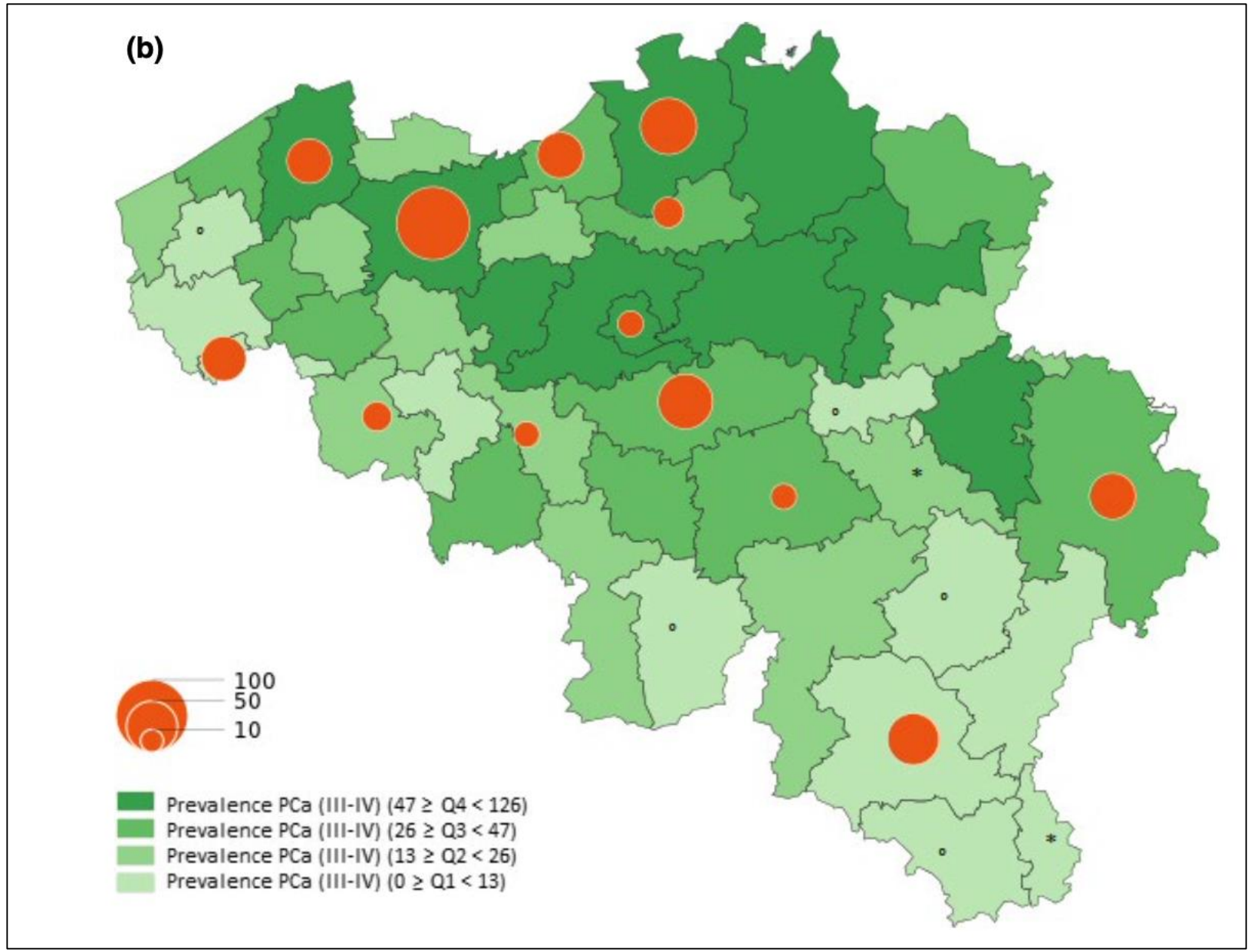
Bultijnck et al, Eur Urology Focus 2016



Bultijnck et al, Eur urology Focus 2016

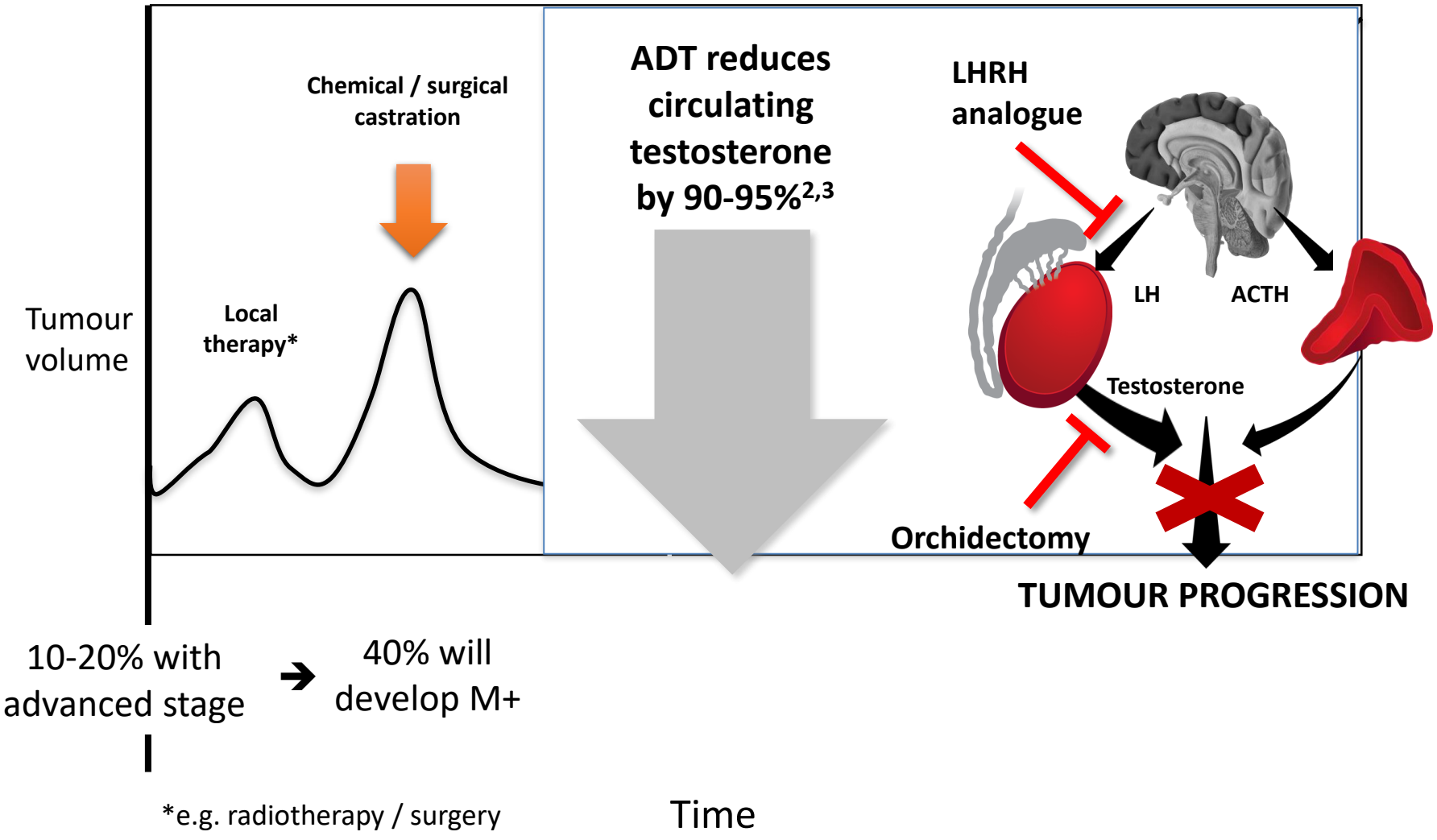


Bultijnck et al, BJU 2017



Bultijnck et al, Eur J cancer care 2018

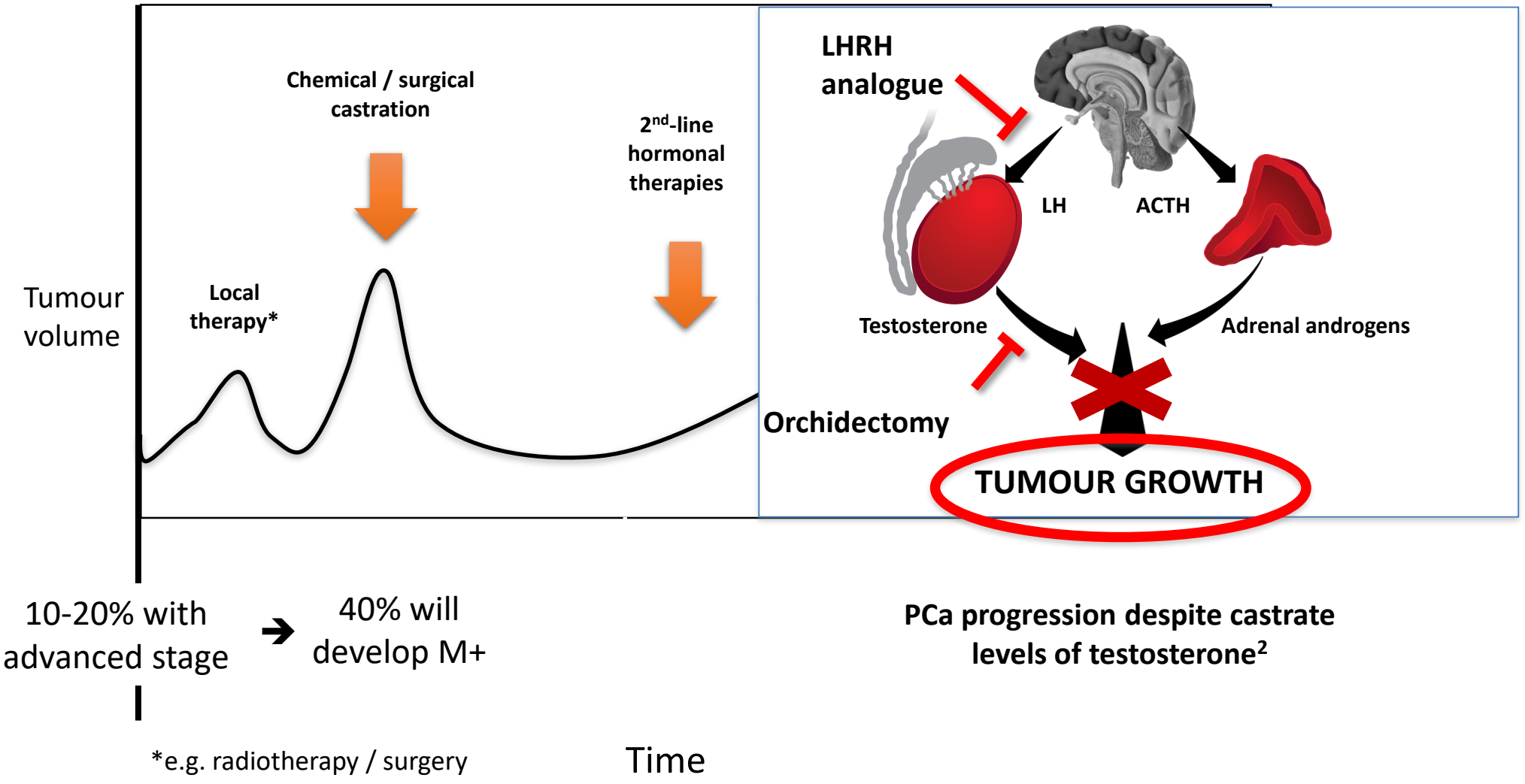
Prostaatkanker: continuum van verschillende stadia



Kohli M, Tindall DJ. Mayo Clin Proc 2010;85:77-86

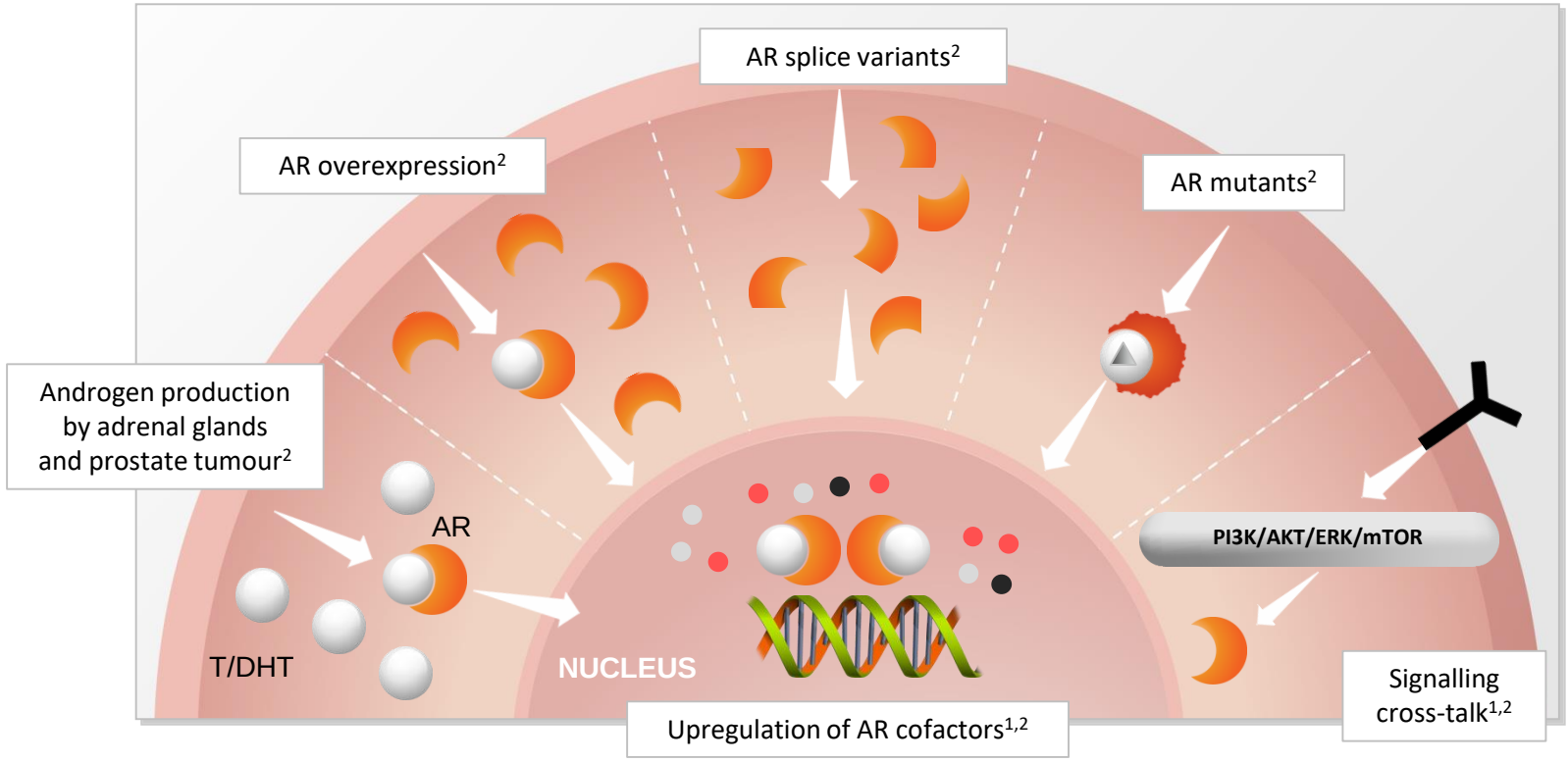
‘TWEEDE’ LIJNS HORMONALE THERAPIE

Prostaatkanker: continuum van verschillende stadia



Kohli M, Tindall DJ. Mayo Clin Proc 2010;85:77-86

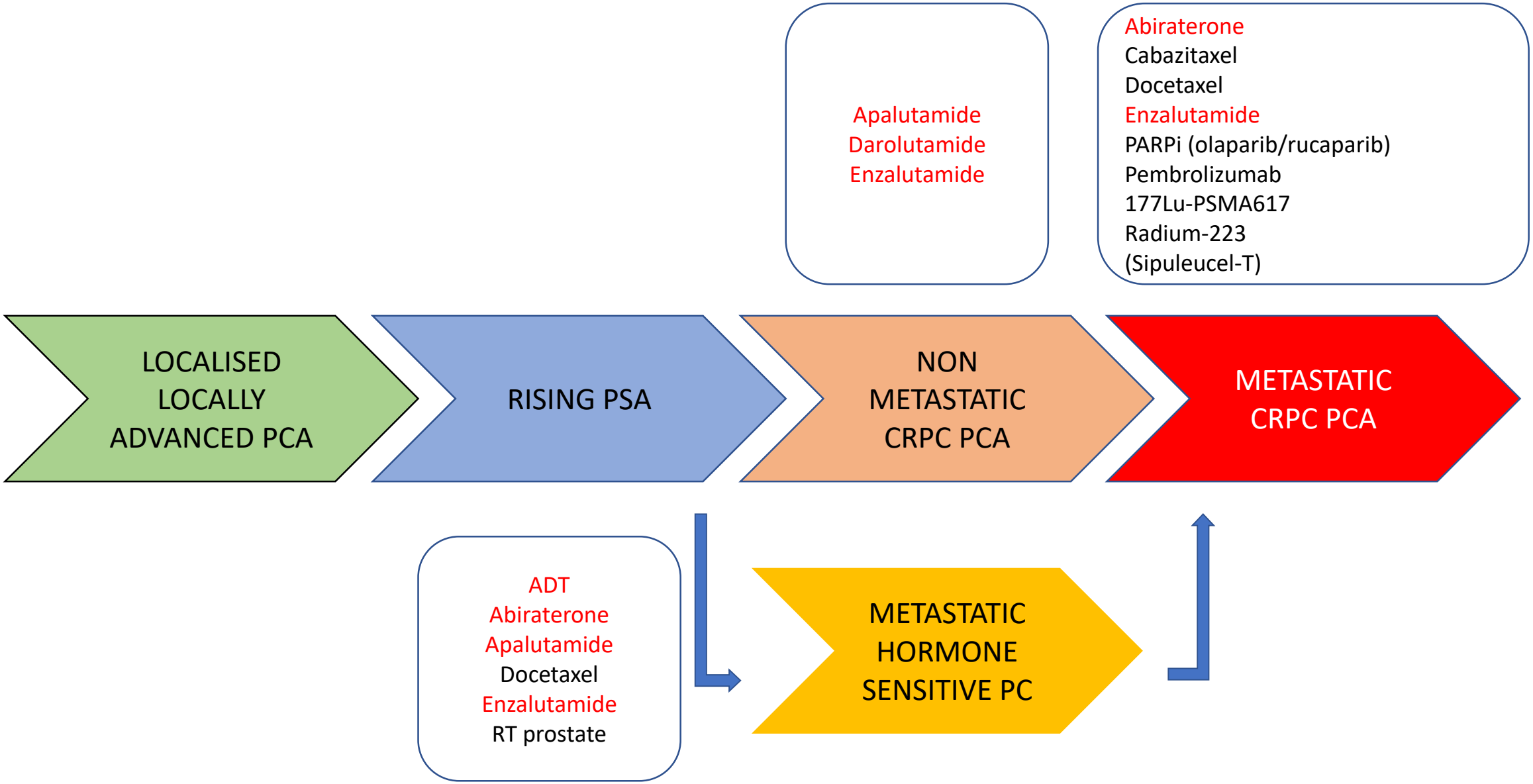
De androgeen receptor is een logische target



1. Heinlein CA, Chang C. Endocr Rev 2004;25:276-308; 2. Hu R et al. Expert Rev Endocrinol Metab 2010;5:753-64

‘TWEEDE’ LIJNS HORMONALE THERAPIE

INDICATIES

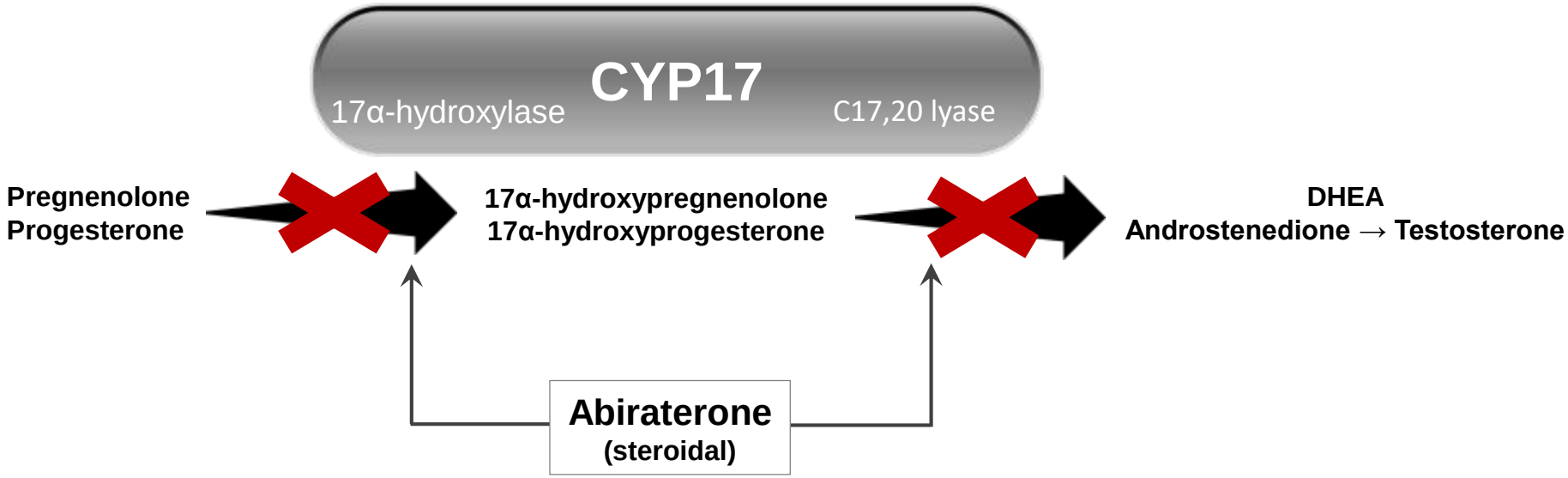

Apalutamide
Darolutamide
Enzalutamide
Abiraterone
Cabazitaxel
Docetaxel
Enzalutamide
PARPi (olaparib/rucaparib)
Pembrolizumab
177Lu-PSMA617
Radium-223
(Sipuleucel-T)
LOCALISED LOCALLY ADVANCED PCA
RISING PSA
NON METASTATIC CRPC PCA
METASTATIC CRPC PCA
ADT
Abiraterone
Apalutamide
Docetaxel
Enzalutamide
RT prostate
METASTATIC HORMONE SENSITIVE PC

‘TWEEDE’ LIJNS HORMONALE THERAPIE

WERKINGSMECHANISME

Abiraterone

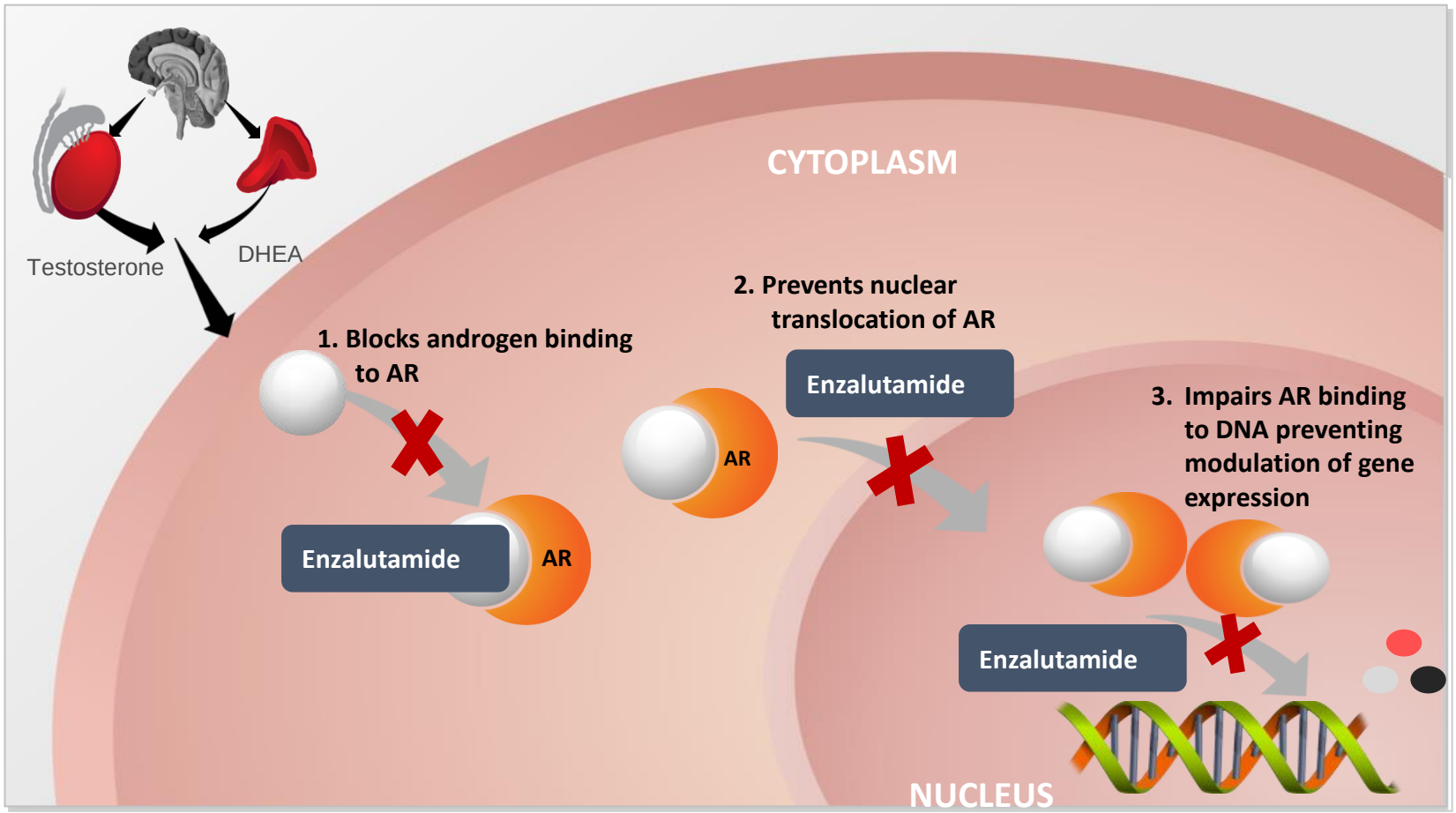
- Irreversible inhibitor of CYP17A: inhibits testosterone production in testis, adrenal glands, and prostate



Zytiga. Package insert and prescribing information. December 2012

Enzalutamide

- Enzalutamide directly targets three key stages of the AR signalling pathway[1,2]



1. Tran C et al. Science 2009;324:787-90; 2. Hu R et al. Expert Rev Endocrinol Metab 2010;5:753-64

‘TWEEDE’ LIJNS HORMONALE THERAPIE

BIJWERKINGEN

Table 2 Summary of ARPI-Specific Adverse Events and Their Management

ARPI	Specific Adverse Event	Physiopathology	Managemnt
Abiraterone	• Hypokalemia • Hypertension • Peripheral edema • Congestive heart fail • Liver function impairment	• Inhibition of CYP17A1	1. Glucocorticoid replacement therapy with low-dose prednisone (5–10mg/day) 2. Monitor potassium and liver function values during treatment 3. Carefully consider the use of abiraterone in patients with cardiovascular comorbidities 4. Reduce the dose or discontinue treatment in case of severe adverse events
Enzalutamide	• Hypertension • Fatigue • Seizures	• Passage through the blood–brain barrier • Off-target activity to induce inhibition of GABA-A receptors	1. Avoid the use of enzalutamide in patients with a predisposition to develop seizures 2. Reduce the dose or discontinue treatment in case of severe adverse events
Apalutamide	• Hypertension • Fatigue • Seizures • Hypothyroidism • Skin rash	• Passage through the blood–brain barrier • Off-target activity to induce inhibition of GABA-A receptors • Interacts with thyroxine and levothyroxine	1. Avoid the use of apalutamide in patients with a predisposition to develop seizures 2. Corticosteroids and oral antihistamines for skin rash 3. Start or optimize treatment with levothyroxine 4. Reduce the dose or discontinue treatment in case of severe adverse events
Darolutamide	• No increase in adverse events compared to placebo	• Less ability to pass the blood–brain barrier	1. Reduce the dose or discontinue treatment in case of severe adverse events

Abbreviations: ADT, androgen deprivation therapy; ARPI, androgen receptor pathway inhibitors; BMI, body mass index; BPA, bisphosphonates; BMD, bone mineral density; ECG, electrocardiogram; GABA-A, gamma-aminobutyric acid-A; Hb, hemoglobin; LHRH, luteinizing hormone releasing hormone; mCRPC, metastatic castration-resistant prostate cancer.

Turco et al, Research and reports in urology, 2023

TABLE 3 Subgroup analysis of second-line hormonal therapy

Outcome	Abiraterone (*n* = 180)	Enzalutamide (*n* = 108)	1st ADT (*n* = 1575)	Abiraterone vs. 1st ADT		Enzalutamide vs. 1st ADT	
				HR (95% CI)	*p* Value	HR (95% CI)	*p* Value
Acute coronary syndrome							
Event rate	2.34%	1.28%	0.69%	6.91 (2.99–16.00)	<.01*	4.12 (1.81–9.37)	<.01*
Incidence density[a]	34.04	15.94	4.71				
Ischemic stroke							
Event rate	2.61%	1.26%	1.75%	3.43 (1.82–6.49)	<.01*	0.63 (0.24–1.62)	.34
Incidence density	39.36	15.38	11.92				
Heart failure							
Event rate	1.53%	1.06%	1.33%	3.12 (1.62–6.00)	<.01*	2.01 (0.82–4.93)	.13
Incidence density	18.97	15.43	8.99				
MACE							
Event rate	3.73%	2.33%	2.22%	4.12 (2.30–7.34)	<.01*	1.05 (0.79–1.51)	.99
Incidence density	55.18	33.87	15.27				

Note: *$p < .05$.

Abbreviations: ADT, androgen deprivation therapy; CI, confidence interval; CV, cardiovascular; HR, hazard ratio; MACE, major adverse cardiovascular events.

[a]Incidence density: event numbers per 1000 person-years.

Liu et al, Prostate, 2020

Table 1. Comorbidities requiring pharmacologic treatment during the last 12 months (as diagnosed by a physician) at any age in at least 10% of men aged 65 years or older.

	Age		
Comorbidity	65–74 years	75–84 years	>85 years
Hypertension	49.8%	53.0%	44.5%
Hypercholesterolemia	41.4%	39.2%	24.1%
Chronic back pain	39.1%	43.3%	50.6%
Cervical	15.5%	18.4%	23.0%
Lumbar	23.6%	24.9%	27.6%
Arthrosis (excluding arthritis)	26.8%	38.7%	49.1%
Diabetes	25.0%	25.9%	22.7%
CV disease	18.8%	26.8%	35.1%
Myocardial infarction	1.6%	2.5%	3.0%
Angina pectoris/Coronary disease	2.4%	4.1%	6.3%
Stroke*	2.6%	1.7%	3.6%
Other†	12.2%	18.5%	22.2%
Prostate problems†	18.4%	28.2%	30.9%
Mental disorders	12.6%	16.9%	17.0%
Depression	6.5%	7.2%	6.1%
Anxiety (chronic)	4.3%	4.9%	3.5%
Other†	1.8%	4.8%	7.4%
Chronic allergy‡	10.0%	7.7%	7.7%
Chronic bronchitis, emphysema, COPD	8.7%	12.3%	16.4%
Urinary incontinence#	7.3%	17.9%	27.6%
Kidney disorders†	4.9%	7.9%	11.3%
Chronic constipation	3.4%	5.0%	14.2%

Adapted from the National Health Survey 2017. Ministerio de Sanidad, Consumo y Bienestar Social. Gobierno de España[30]. This survey was carried out using a closed questionnaire. The answers were reported by participants and no confirmed diagnosis is available.

*Includes embolism, cerebral infarction, brain hemorrhage.

†Not specified in the original document.

‡Includes rhinitis, conjunctivitis, food allergies, and other allergies except allergic asthma.

#Includes urine control problems.

COPD, chronic obstructive pulmonary disease.

Condez-Estévez et al, Expert opinion on drug metabolism & toxicology, 2022

Table 2. DDIs between ARIs and frequent treatments for common metabolic disorders in men with nmCRPC receiving ADT.

			Effect of ARIs on comedication exposure ('perpetrators')			Effect of comedications on ARI exposure ('victims')		
Condition	Drug class	Common treatments	Apalutamide	Enzalutamide	Darolutamide	Apalutamide	Enzalutamide	Darolutamide
Hypertension	Ca channel blocker	Diltiazem	↓↓/↓↓	↓↓/↓	-/-	-/-	-/-	-/-
		Nifedipine	↓↓/↓↓	↓↓/↓↓	-/-	-/-	-/-	-/-
		Verapamil	↓↓/↓↓	↓↓/-	-/-	-/-	-/↑	-/-
		Amlodipine	↓/↓↓	↓/↓↓	-/-	-/-	-/-	-/-
	ARB	Losartan	↓/↓	↓/↓	-/-	-/-	-/-	-/-
		Valsartan	-/↓	-/-	-/↑	-/-	-/-	-/-
	Beta-blocker	Atenolol	-/-	-/-	-/-	-/-	-/-	-/-
		Propranolol	-/↓	-/↓	-/-	-/-	-/-	-/-
		Bisoprolol	↓/-	↓/-	-/-	-/-	-/-	-/-
	ACE inhibitor	Enalapril	-/-	-/-	-/-	-/-	-/-	-/-
		Captopril	-/-	-/-	-/-	-/-	-/-	-/-
	Diuretics	Furosemide	-/-	-/-	-/-	-/-	-/-	-/-
		Hydrochlorothiazide	-/-	-/-	-/-	-/-	-/-	-/-
		Spironolactone	-/-	-/-	-/-	-/-	-/-	-/-
Dyslipidaemia	Statins	Rosuvastatin	↓/↓	-/-	↑↑/↑↑	-/-	-/-	-/-
		Atorvastatin	↓/↓	↓/↓	-/↑	-/-	-/-	-/-
		Simvastatin	-/↓	-/↓	-/↑	-/-	-/-	-/-
		Fluvastatin	-/↓	↓/↓	-/↑	-/-	-/-	-/-
		Pravastatin	-/↓	-/-	-/↑	-/-	-/-	-/-
		Pitavastatin	-/↓	-/-	-/↑	-/-	-/-	-/-
		Lovastatin	-/↓	-/↓	-/↑	-/-	-/-	-/-
	Fibrates	Gemfibrozil	-/-	-/-	-/-	↑/↑	↑↑/↑	-/-
Diabetes mellitus	Biguanides	Metformin	-/-	-/-	-/-	-/-	-/-	-/-
	Sulfonylureas	Gliclazide	-/↓	↓/↓	-/-	-/-	-/-	-/-
		Glimepiride	-/↓	↓/↓	-/-	-/-	-/-	-/-
		Glyburide	-/↓	↓/↓	-/↑	-/-	-/-	-/-
	DPP-4 inhibitors	Linagliptin	↓↓/↓	↓↓/↓	-/-	-/-	-/-	-/-
		Saxagliptin	↓/↓	↓/↓	-/-	-/-	-/-	-/-
	Meglitinides	Repaglinide	↓/↓	↓/↓	-/↑	-/-	-/-	-/-
	Insulin	Insulin	-/-	-/-	-/-	-/-	-/-	-/-

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Table 3. DDIs between ARIs and frequent treatments for common cardiovascular diseases in men with nmCRPC receiving ADT.

			Effect of ARIs on comedication exposure ('perpetrators')			Effect of comedications on ARI exposure ('victims')		
Condition	Drug class	Common treatments	Apalutamide	Enzalutamide	Darolutamide	Apalutamide	Enzalutamide	Darolutamide
CV disease[†], deep vein thrombosis, atrial fibrillation	Antithrombotics	Warfarin	↓/↓	↓↓/↓	-/-	-/-	-/-	-/-
		Acenocoumarin	↓/↓	↓↓/↓	-/-	-/-	-/-	-/-
		Heparin	-/-	-/-	-/-	-/-	-/-	-/-
		Dabigatran	X(↓↓↓)/↓	-/↓	-/-	-/-	-/-	-/-
		Rivaroxaban	X(↓↓↓)/↓↓	↓↓/↓↓	-/↑	-/-	-/-	-/-
		Apixaban	X(↓↓↓)/↓↓	↓↓/↓↓	-/-	-/-	-/-	-/-
		Edoxaban	↓↓/↓	↓↓/↓	-/-	-/-	-/-	-/-
	Antiplatelet agents	ASA	-/-	-/-	-/-	-/-	-/-	-/-
		Clopidogrel	↓↓/-	↓/↓	-/-	-/-	-/-	-/-
		Ticagrelor	X(↓↓↓)/↓↓	X(↓↓↓)/↓↓	-/-	-/-	-/-	-/-
Cardiac arrhythmia, HF	Cardiac glycosides	Digoxin	↓/↓	-/↓	-/-	-/-	-/-	-/-
	Antiarrhythmics	Amiodarone	↓/↓↓	↓/↓↓	-/-	-/-	-/-	-/-
		Dronedarone	X(↓↓↓)/↓↓	X(↓↓↓)/↓↓	-/-	-/-	-/-	-/-

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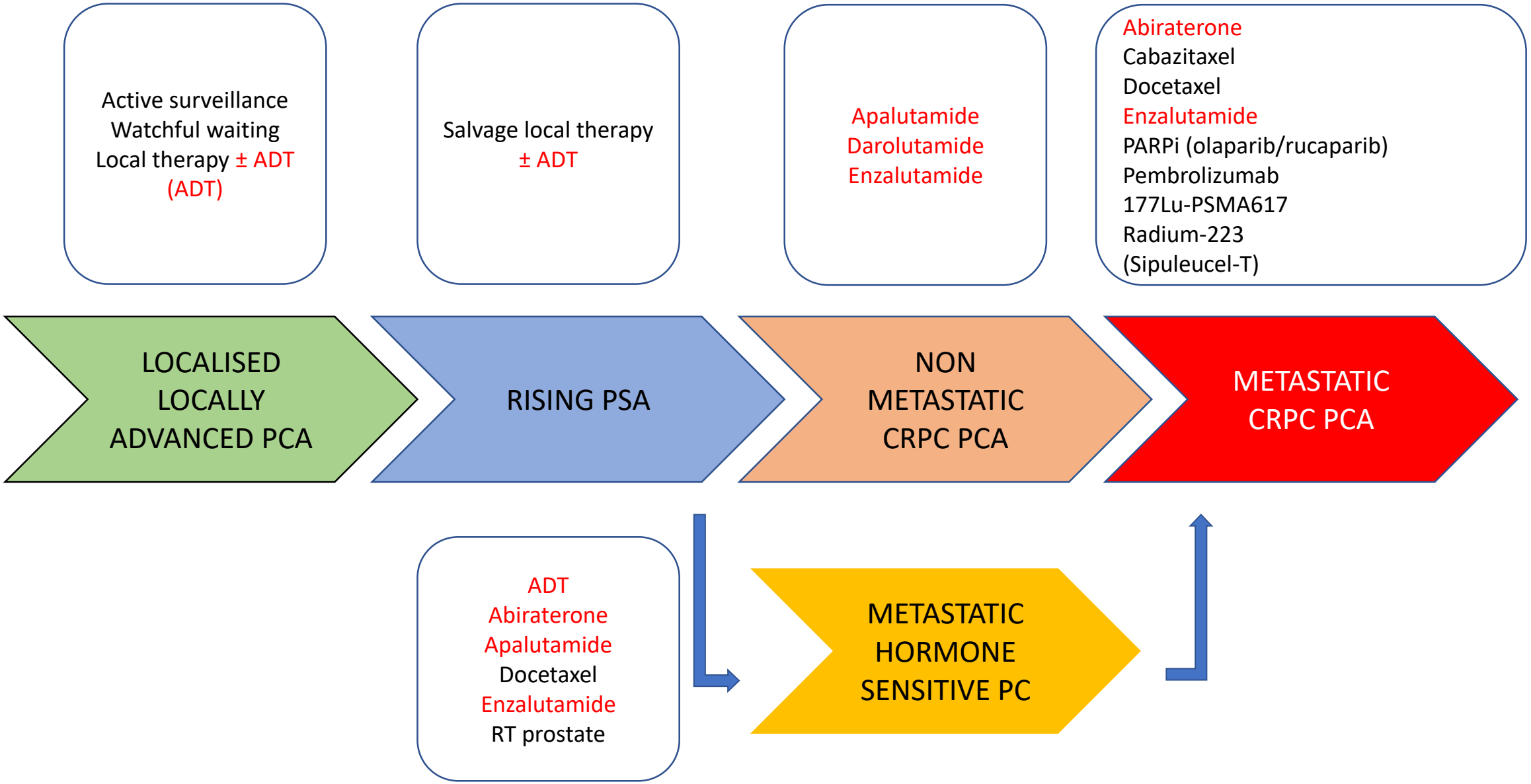
CONCLUSIE


Active surveillance
Watchful waiting
Local therapy ± ADT
(ADT)
Salvage local therapy
± ADT
Apalutamide
Darolutamide
Enzalutamide
Abiraterone
Cabazitaxel
Docetaxel
Enzalutamide
PARPi (olaparib/rucaparib)
Pembrolizumab
177Lu-PSMA617
Radium-223
(Sipuleucel-T)
LOCALISED
LOCALLY
ADVANCED PCA
RISING PSA
NON
METASTATIC
CRPC PCA
METASTATIC
CRPC PCA
ADT
Abiraterone
Apalutamide
Docetaxel
Enzalutamide
RT prostate
METASTATIC
HORMONE
SENSITIVE PC

- De hormonale therapie is essentieel in de behandeling van prostaatkanker
- MAAR niet zonder bijwerkingen
- Screening!
- Inclusie in zorgpad
- CAVE drug-drug interactie