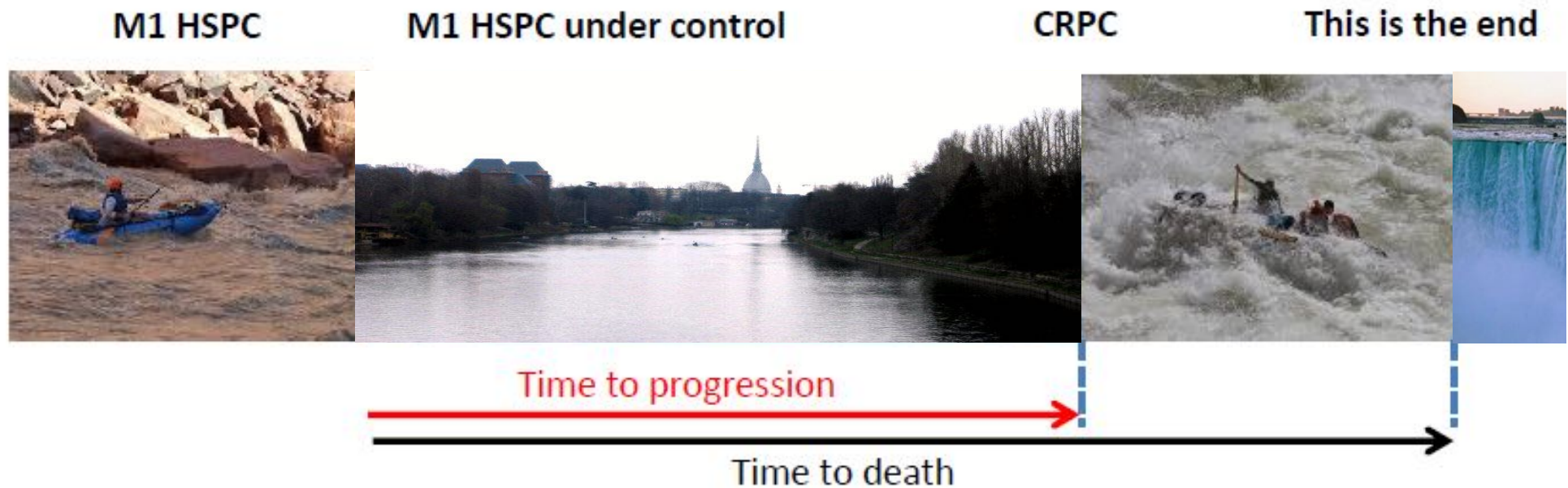


Nuove prospettive della terapia della malattia sensibile alla castrazione

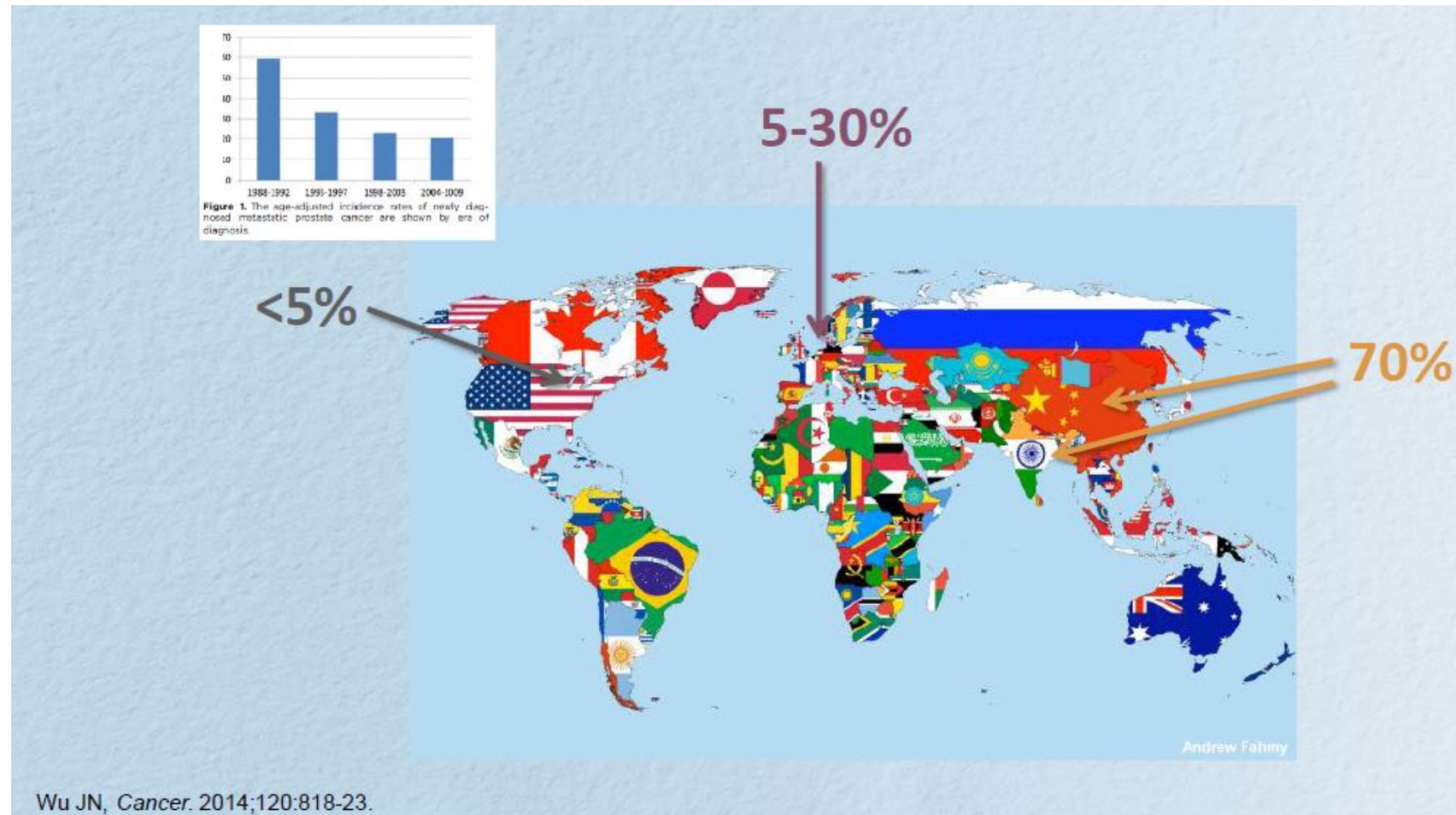
Marcello Tucci
SCDU Oncologia Medica
Azienda Ospedaliero Universitaria San Luigi di
Orbassano
Università degli studi di Torino

The natural history of metastatic, hormone-naive prostate cancer

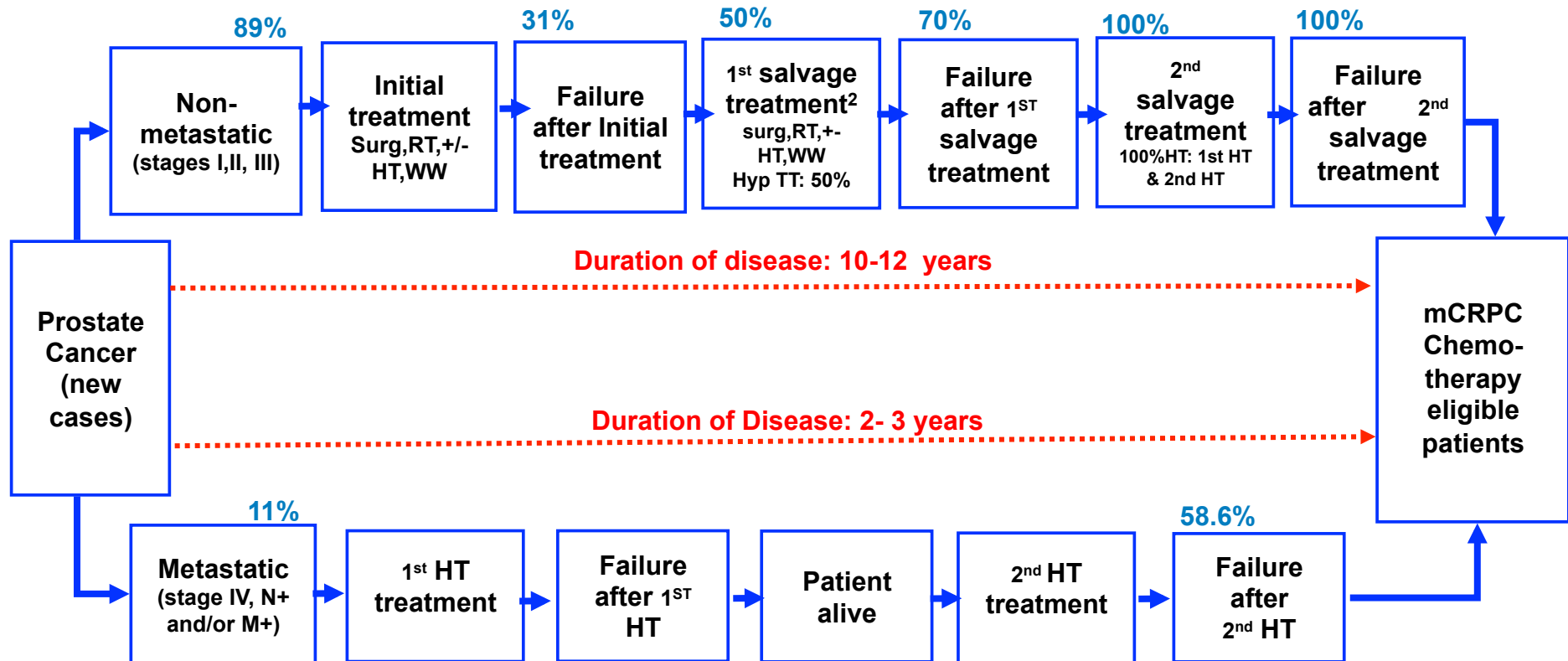
THE HOPE



Incidence of *de novo* metastatic PC



Prostate cancer patients flow



Source: GHOMA / Analytic Epidemiology

De novo metastatic prostate cancer: have we made progresses?

No Improvement Noted in Overall or Cause-Specific
Survival for Men Presenting With Metastatic Prostate
Cancer Over a 20-Year Period

Jennifer N. Wu, MD¹; Kari M. Fish, MPH²; Christopher P. Evans, MD¹; Ralph W. deVere White, MD¹; and Marc A. Dall'Era, MD¹

Flutamide	697	424	178	32	0
Placebo	686	408	152	32	0

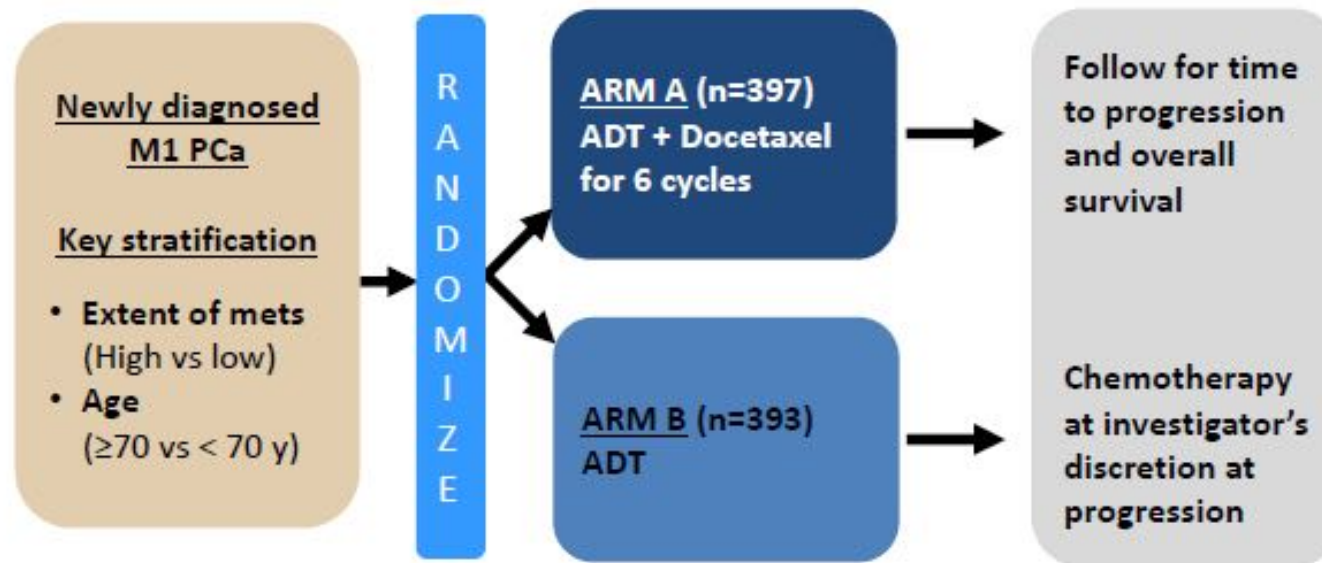
Vogelzang NJ, Urology 1995; 46: 220-226

Eisenberger, N Engl J Med 1998, 339: 1036-42

Hussain M, N Engl J Med 2013; 368: 1314-25

Wu JN, Cancer 2014; 120: 818-23

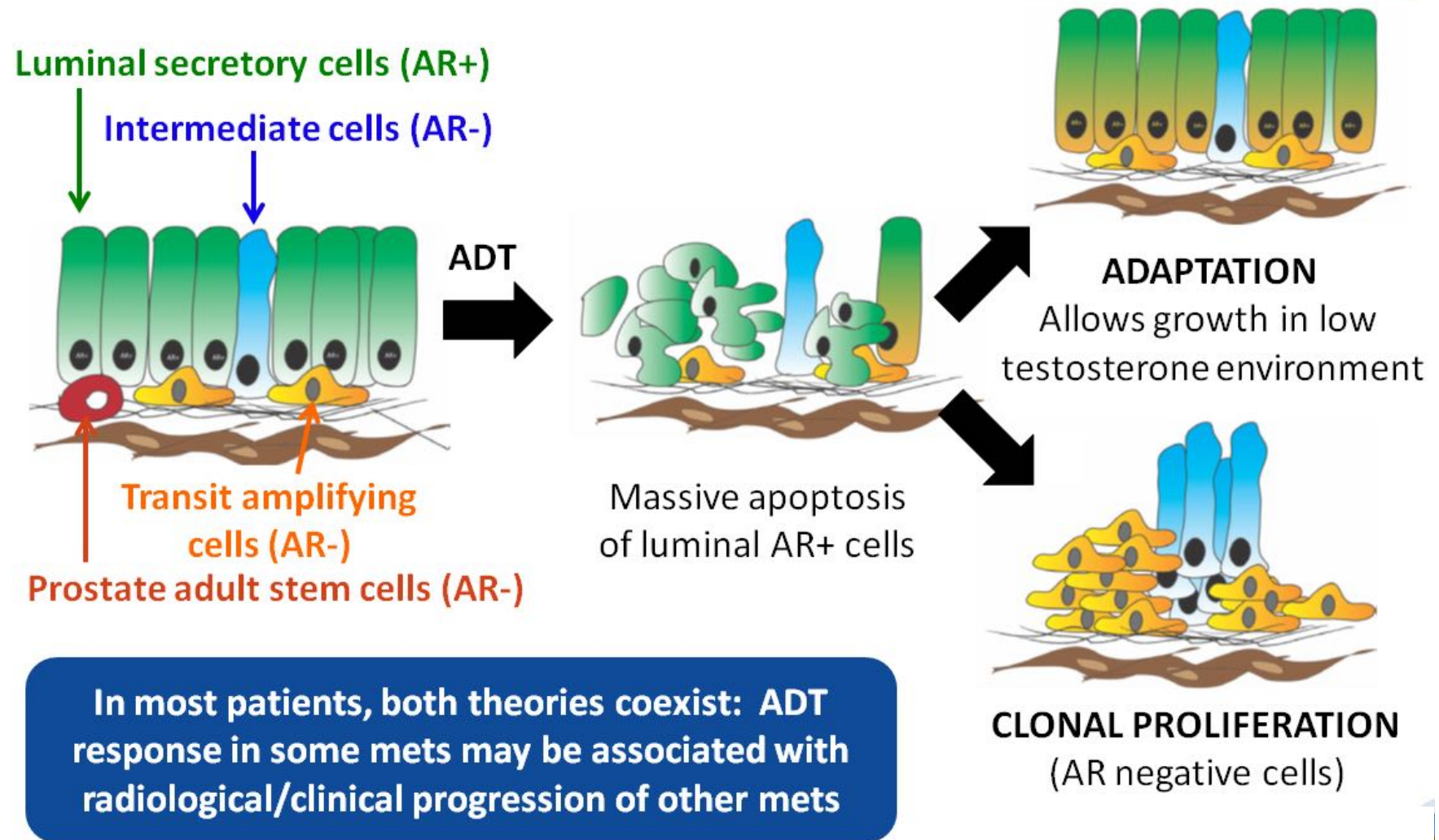
E3805 – CHAARTED study



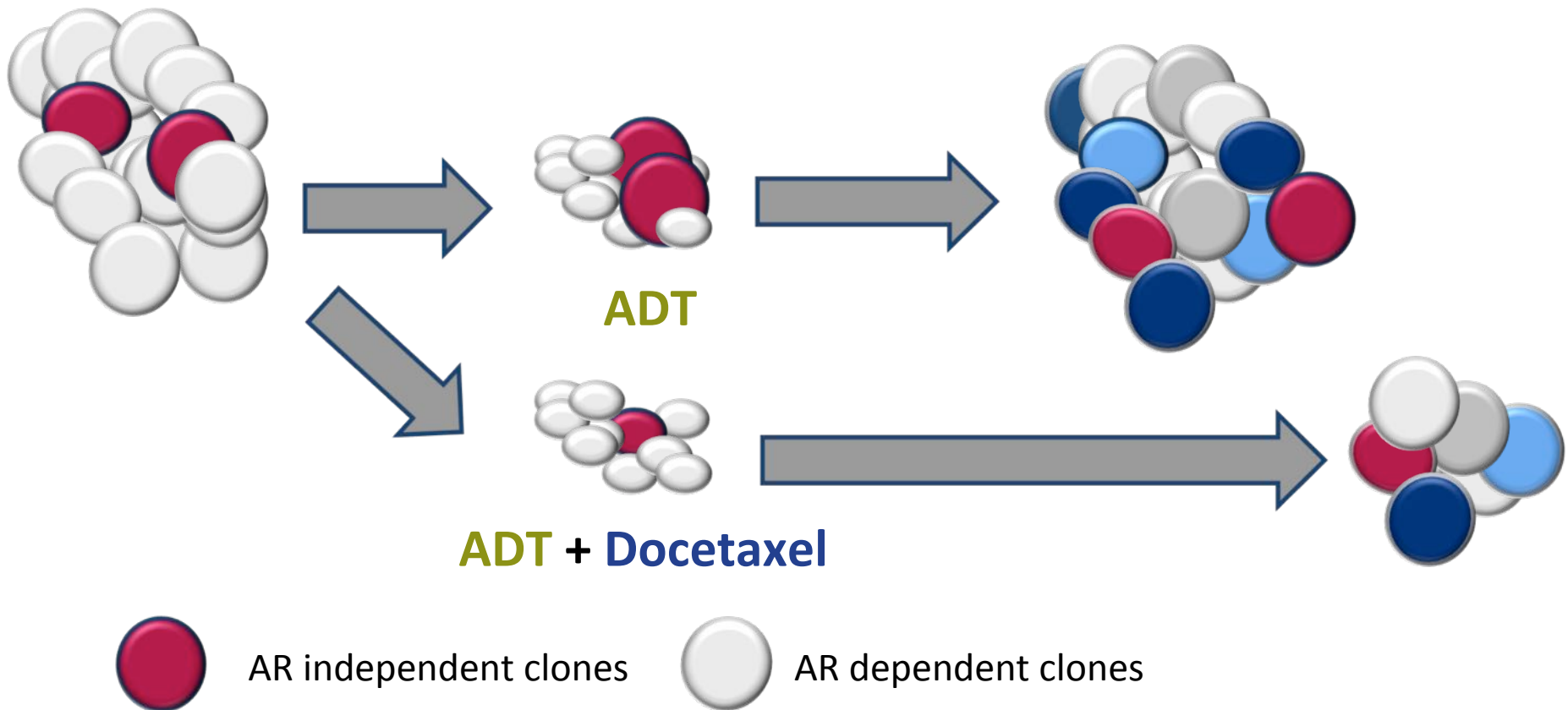
- Open-label, multicenter, phase III trial conducted in US
- Standard dexamethasone premedication **but no daily prednisone**

Sweeney C et al. J Clin Oncol 2014;32(June 20 suppl):abstract LBA2. ADT: androgen deprivation therapy; Mets: Metastases; PS: Performance Status; SRE: Skeletal Related Events; CAB: Complete Androgen Blockade; docétaxel (75mg/m² every 21 days)

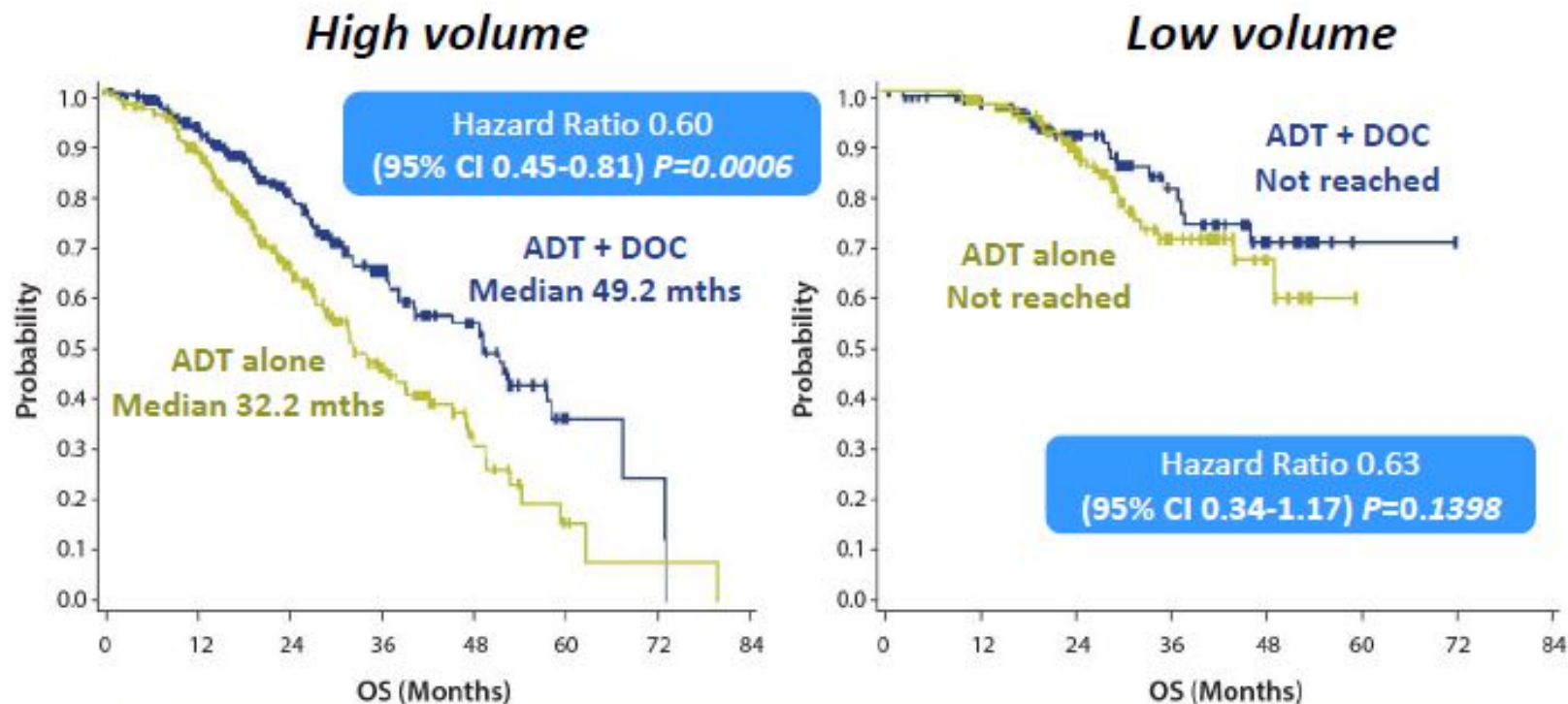
PCa progression in low testosterone environment: 2 leading theories



The CHAARTED hypothesis



Overall survival by extent of metastatic disease at start of ADT



**17-month benefit in median OS (from 32.2 to 49.2 months)
for high volume disease**

CHAARTED Key eligibility criteria

- **High volume metastatic disease:**
 - visceral metastases
and/or
 - 4 or more bone metastases (with at least 1 beyond pelvis and vertebral column)
- At study initiation, only patients with high volume disease were to be accrued
 - Study amendment to allow patients with low volume to be enrolled, with stratification on disease volume

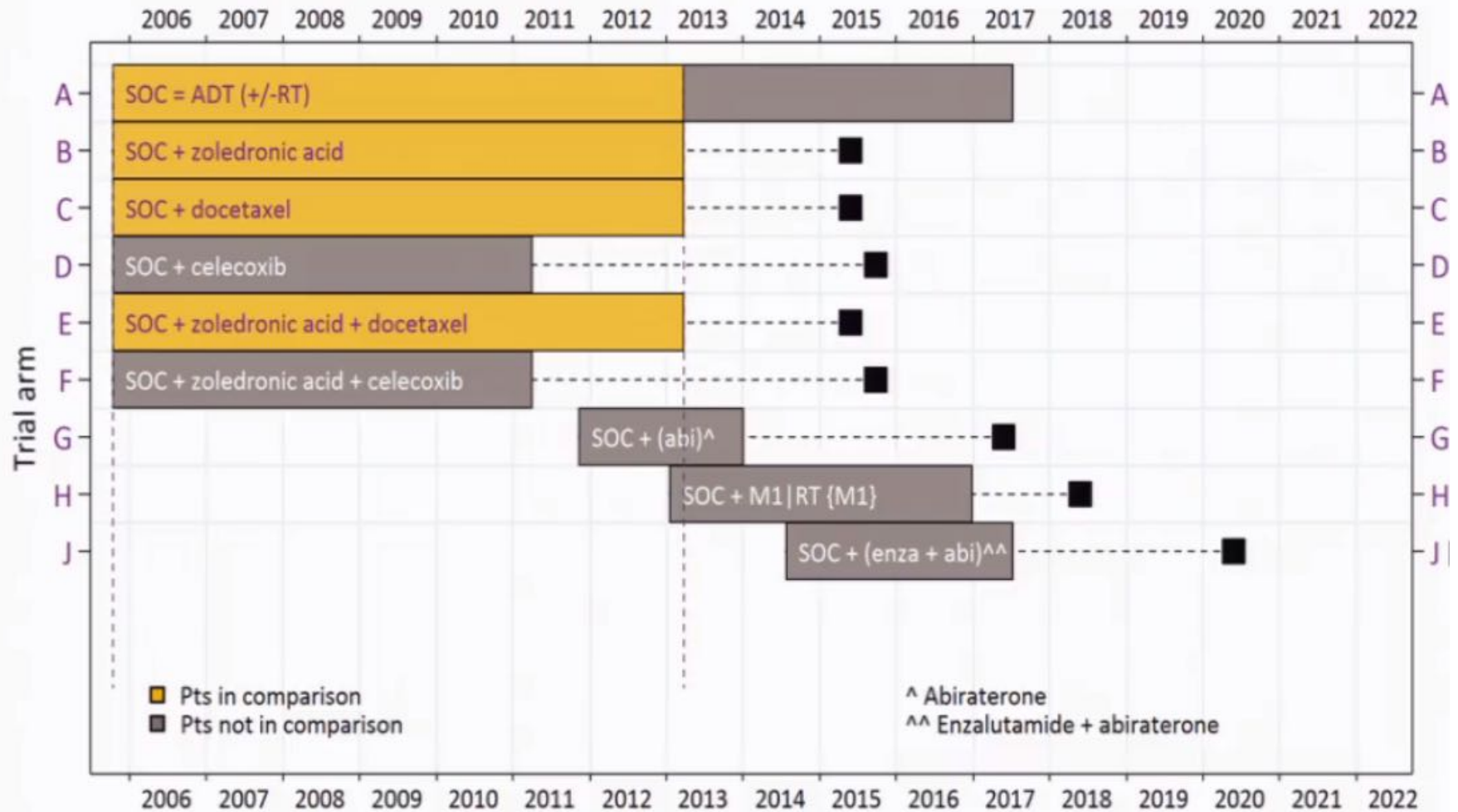
**Is high volume disease definition
based on robust data?**

High volume disease is prognostic in metastatic hormone sensitive prostate cancer

Clinical Status	Trials (name)	Patients number	Definition of disease spread	mOS (minimal vs severe)
SWOG: S8894 ¹	Orchidectomy ± Flutamide	1387	Appendicular skeletal, visceral met or both	51 vs 27 mths
SWOG: S8494 ²	Leuprolide ± Flutamide	603	Absence of mets in ribs, long bones, skull, soft tissues other than LN	39 vs 26 mths
SWOG-9346 ³	Intermittent vs continuous ADT	3040	Ribs, long bones, or visceral mets	Continuous tt 6.9 vs 4.4 yrs
MD Anderson ⁴	ADT ± KAVE	306	3 or more bone mets or visceral mets	7.8 vs 3.75 yrs

1. Eisenberg M et al. N Engl J Med 1988;339:1036-42; 2. Crawford E et al. N Engl J Med 1989;321:419-24;
3. Hussain M et al. N Engl J Med 2013;368:1314-25; 4. Millikan E et al. J Clin Oncol 2008;26:5936-42

STAMPEDE: All docetaxel and zoledronic acid comparisons



A = ~1200 pts --> ~404 primary outcome measure events
 B = ~600 pts, C = ~600 pts, E = ~600 pts

Patients characteristics

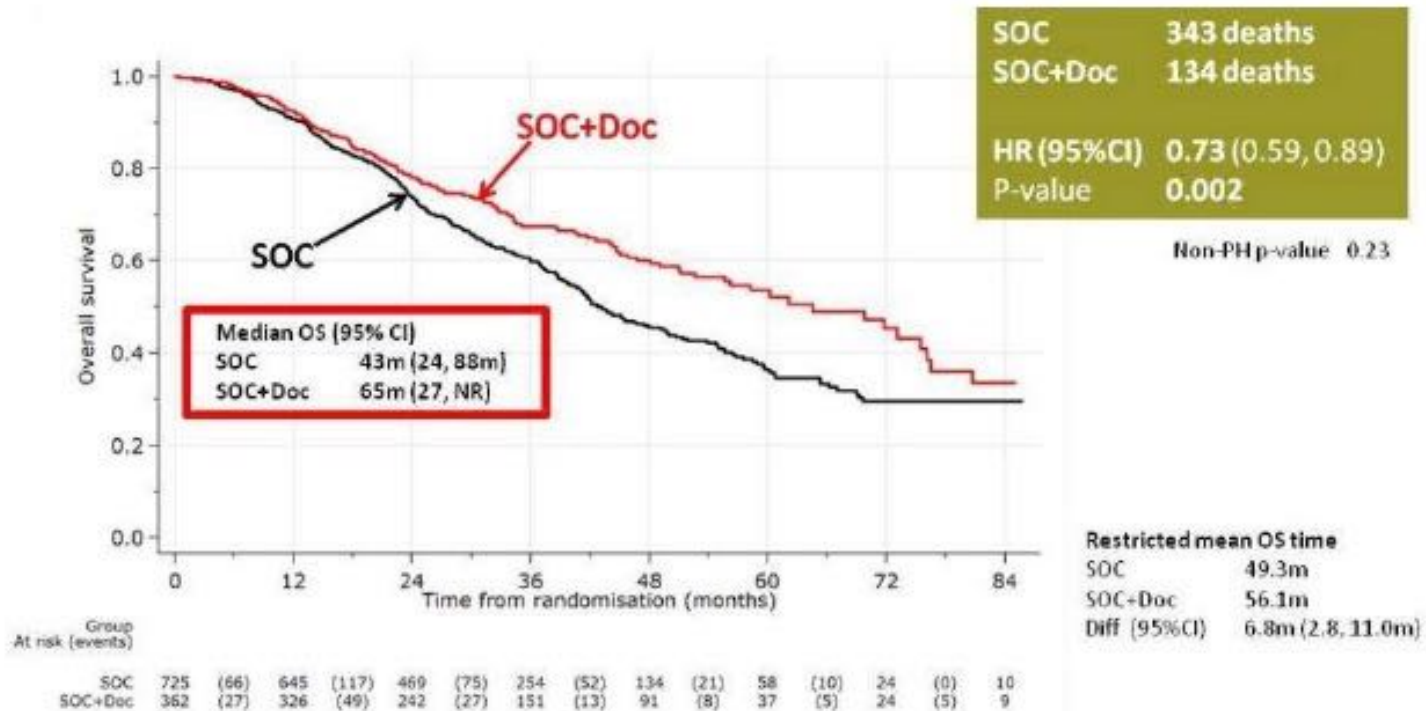
Accrual: 2962 patients

- 1184 Standard of care (SOC)
- 593 SOC + zoledronic acid
- 592 SOC + docetaxel
- 593 SOC + docetaxel + zoledronic acid

-Metastatic patients: 61% of patients

-62% of 2797 newly diagnosed patients had metastatic disease at study entry

STAMPEDE – OS in M1 Patients Docetaxel

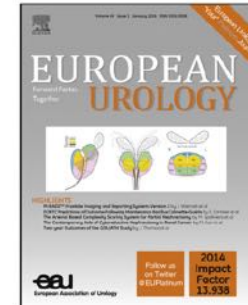


Phase III randomized trial in 2962 men with M0/M1 in 4 groups with zometa with hormone-naïve Pca;
 Primary endpoint: overall survival

OS: overall survival

James, ND et al. Lancet. 2016;387:1163-77.

available at www.sciencedirect.com
journal homepage: www.europeanurology.com



Platinum Priority – Review – Prostate Cancer

Editorial by Guru Sonpavde and Joaquim Bellmunt on pp. 574–575 of this issue

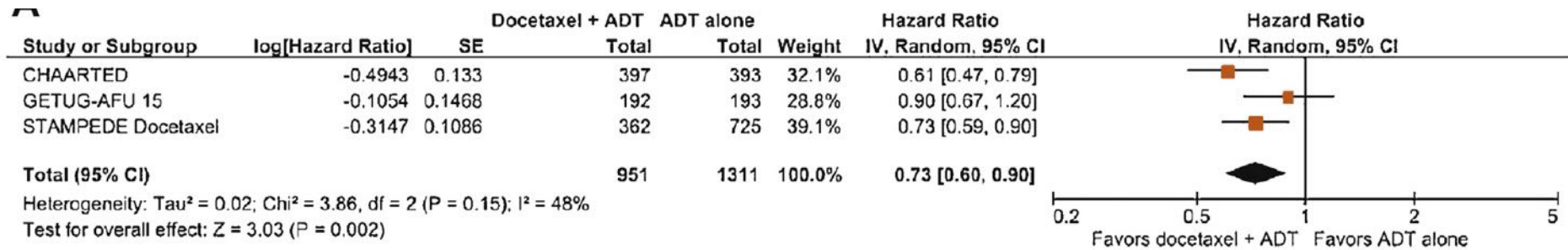
Addition of Docetaxel to Androgen Deprivation Therapy for Patients with Hormone-sensitive Metastatic Prostate Cancer: A Systematic Review and Meta-analysis

Marcello Tucci^a, Valentina Bertaglia^a, Francesca Vignani^a, Consuelo Buttigliero^a, Cristian Fiori^b, Francesco Porpiglia^b, Giorgio Vittorio Scagliotti^a, Massimo Di Maio^{a,}*

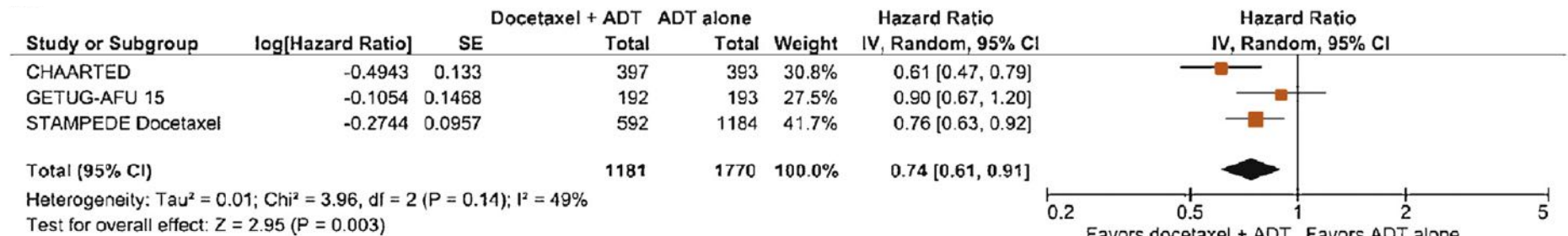
^aDivision of Medical Oncology, Department of Oncology, University of Turin, San Luigi Gonzaga Hospital, Orbassano, Turin, Italy; ^bDivision of Urology, Department of Oncology, University of Turin, San Luigi Gonzaga Hospital, Orbassano, Turin, Italy

Addition of docetaxel to ADT: a meta-analysis

OVERALL SURVIVAL: Only metastatic patients



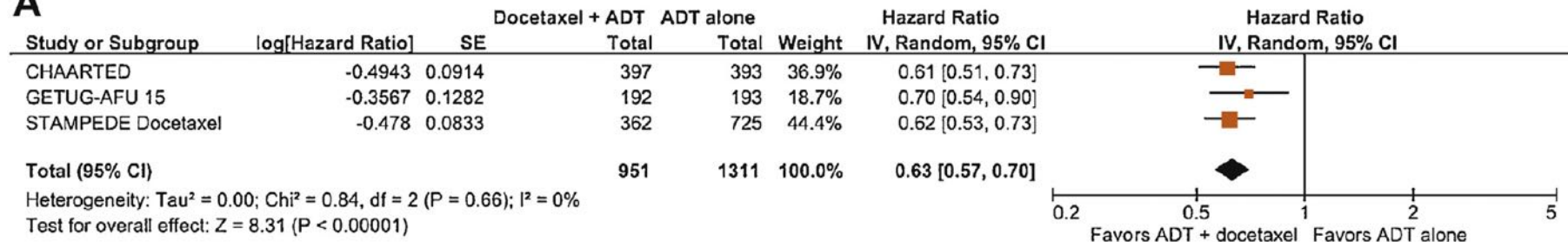
OVERALL SURVIVAL: All randomized patients



Addition of docetaxel to ADT: a meta-analysis

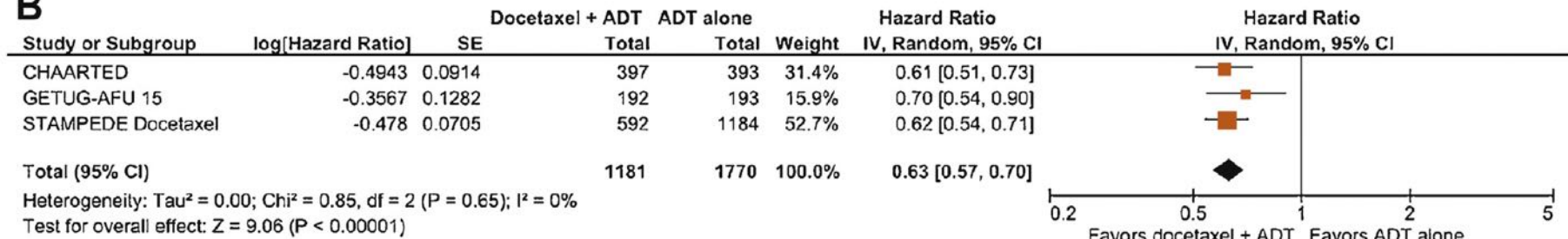
PROGRESSION-FREE SURVIVAL: Only metastatic patients

A



PROGRESSION-FREE SURVIVAL: All randomized patients

B



QUESITO GRADE:

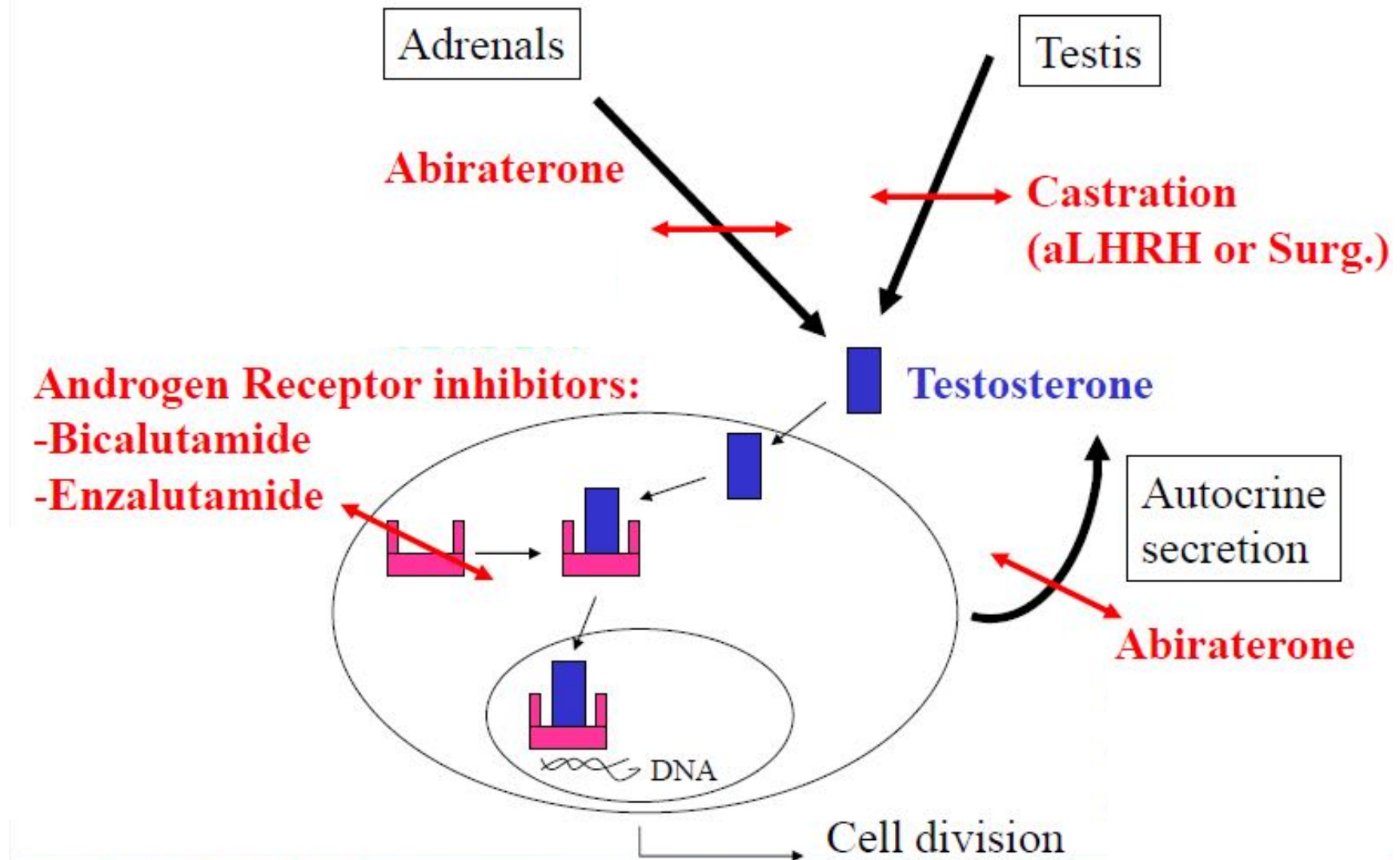
Nei pazienti con malattia metastatica (M1) ormono-sensibile, “high volume” alla diagnosi secondo i criteri CHARTED, che non abbiano controindicazioni alla chemioterapia, è raccomandabile l’associazione del Docetaxel up-front alla terapia androgeno-soppressiva?

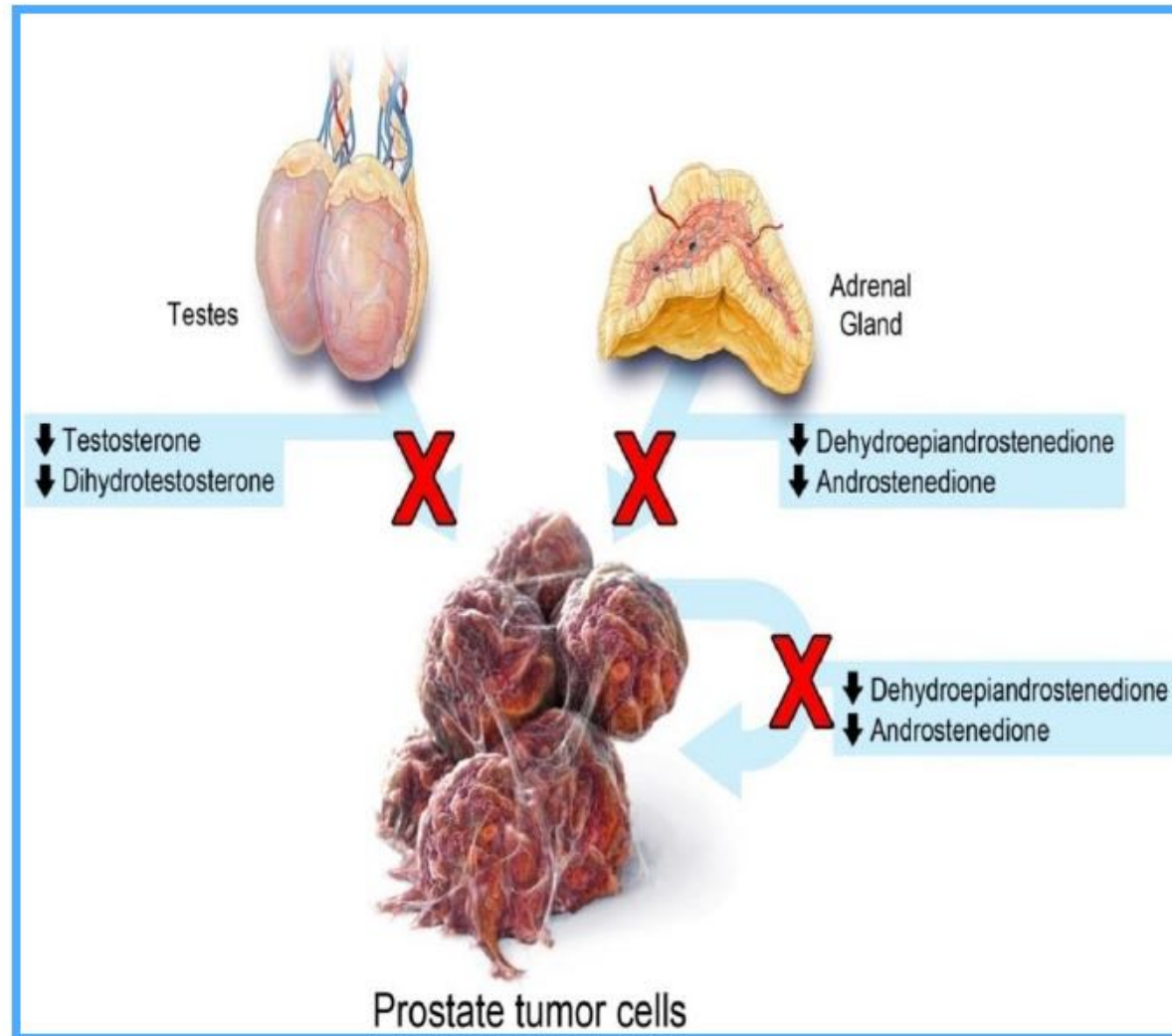
RACCOMANDAZIONE:

Nei pazienti con malattia metastatica (M1) ormono-sensibile, “high volume” alla diagnosi secondo i criteri CHARTED, l’associazione up-front di Docetaxel (6 cicli) alla terapia androgeno-soppressiva dovrebbe essere presa in considerazione.

Forza della raccomandazione: **POSITIVA FORTE**

Targeting the AR pathway





Abiraterone Inhibits Androgen Biosynthesis Through CYP17

STAMPEDE
N Engl J Med. 2017 June 3
[Epub ahead of print]

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

**Abiraterone for Prostate Cancer Not
Previously Treated with Hormone Therapy**

N.D. James, J.S. de Bono, M.R. Spears, N.W. Clarke, M.D. Mason, D.P. Dearnaley, A.W.S. Ritchie, C.L. Amos, C. Gilson, R.J. Jones, D. Matheson, R. Millman, G. Attard, S. Chowdhury, W.R. Cross, S. Gillessen, C.C. Parker, J.M. Russell, D.R. Berthold, C. Brawley, F. Adab, S. Aung, A.J. Birtle, J. Bowen, S. Brock, P. Chakraborti, C. Ferguson, J. Gale, E. Gray, M. Hingorani, P.J. Hoskin, J.F. Lester, Z.I. Malik, F. McKinna, N. McPhail, J. Money-Kyrle, J. O'Sullivan, O. Parikh, A. Protheroe, A. Robinson, N.N. Srihari, C. Thomas, J. Wagstaff, J. Wylie, A. Zarkar, M.K.B. Parmar, and M.R. Sydes, for the STAMPEDE Investigators*

LATITUDE
N Engl J Med. 2017 June 4
[Epub ahead of print]

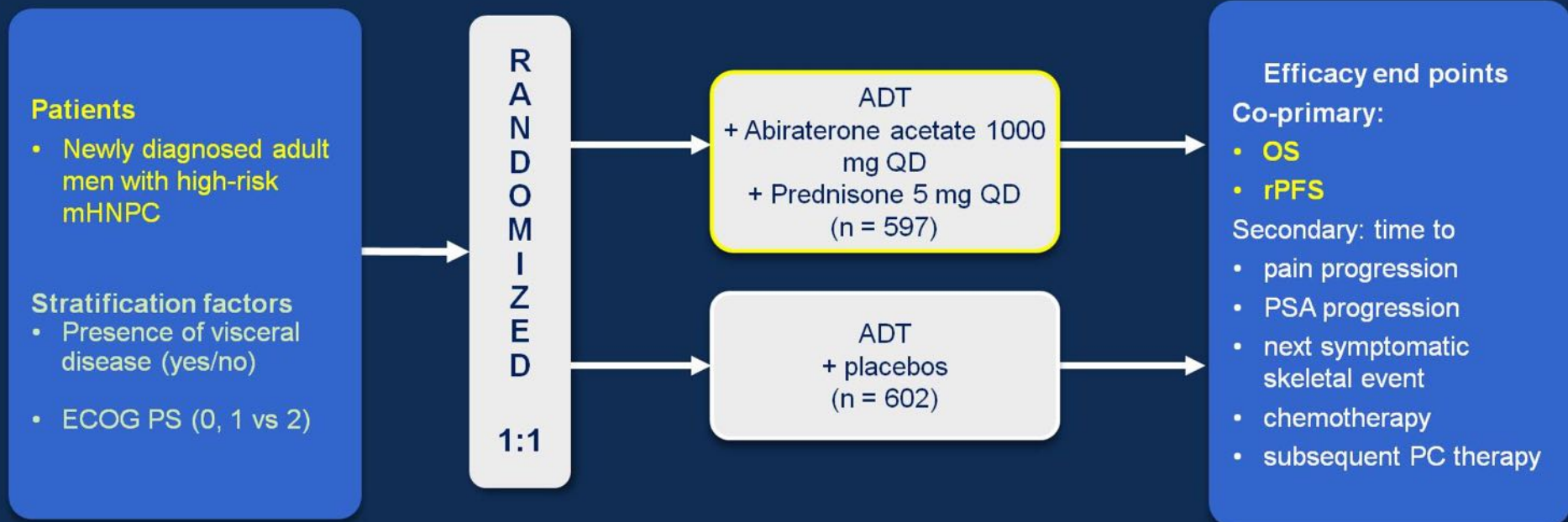
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

**Abiraterone plus Prednisone in Metastatic,
Castration-Sensitive Prostate Cancer**

Karim Fizazi, M.D., Ph.D., NamPhuong Tran, M.D., Luis Fein, M.D., Nobuaki Matsubara, M.D., Alfredo Rodriguez-Antolin, M.D., Ph.D., Boris Y. Alekseev, M.D., Mustafa Özgüroğlu, M.D., Dingwei Ye, M.D., Susan Feyerabend, M.D., Andrew Protheroe, M.D., Ph.D., Peter De Porre, M.D., Thian Kheoh, Ph.D., Youn C. Park, Ph.D., Mary B. Todd, D.O., and Kim N. Chi, M.D., for the LATITUDE Investigators*

Overall study design of LATITUDE



- Conducted at 235 sites in 34 countries in Europe, Asia-Pacific, Latin America, and Canada
- Designed and fully enrolled prior to publication of CHARTED/STAMPEDE results

Objective

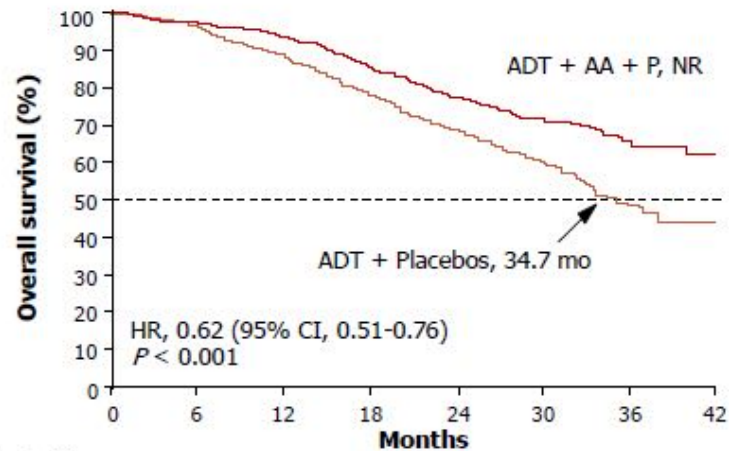
To evaluate the addition of AA + P to ADT on clinical benefit in men with newly diagnosed, high-risk, mCNPC

High-risk defined as meeting at least 2 of 3 high-risk criteria:

- Gleason score of ≥ 8
- Presence of ≥ 3 lesions on bone scan
- Presence of measurable visceral lesion

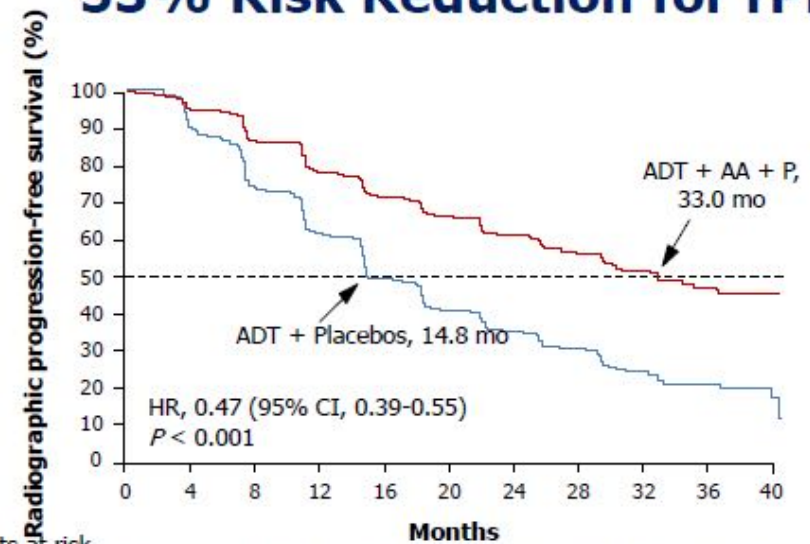
LATITUDE: Co-primary End Points

38% Risk Reduction for Death



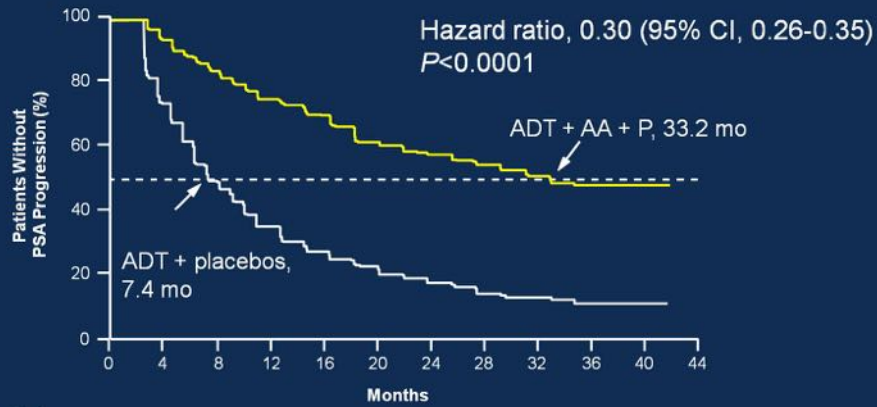
Patients at risk		0	6	12	18	24	30	36	42
ADT + AA + P	597	565	529	479	388	233	93	9	
ADT + Placebos	602	564	504	432	332	172	57	2	

53% Risk Reduction for rPFS



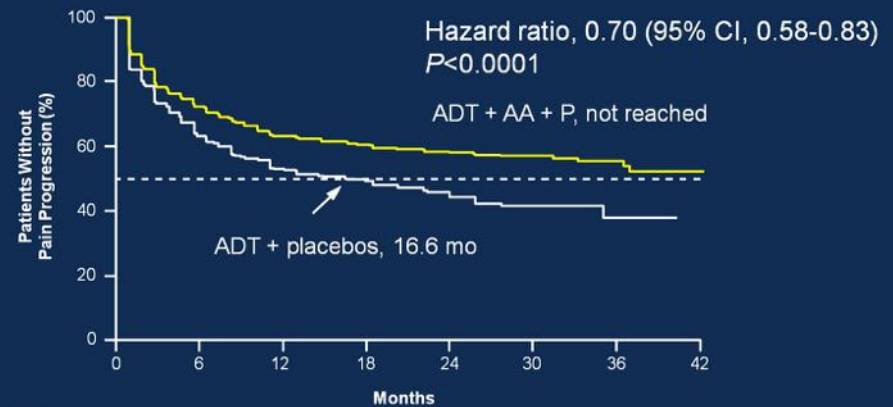
Patients at risk		0	4	8	12	16	20	24	28	32	36	40
ADT + AA + P	597	533	464	400	353	316	251	177	102	51	21	
ADT + Placebos	602	488	367	289	214	168	127	81	41	17	7	

Statistically significant 70% risk reduction of time to PSA progression



No. at risk												
ADT + AA + P	597	520	447	379	340	285	227	162	95	48	18	0
ADT + placebos	602	393	250	172	129	102	65	33	19	8	5	0

Statistically significant 30% risk reduction of time to pain progression



No. at risk								
ADT + AA + P	597	395	297	247	181	96	39	2
ADT + placebos	602	332	211	137	82	36	7	0

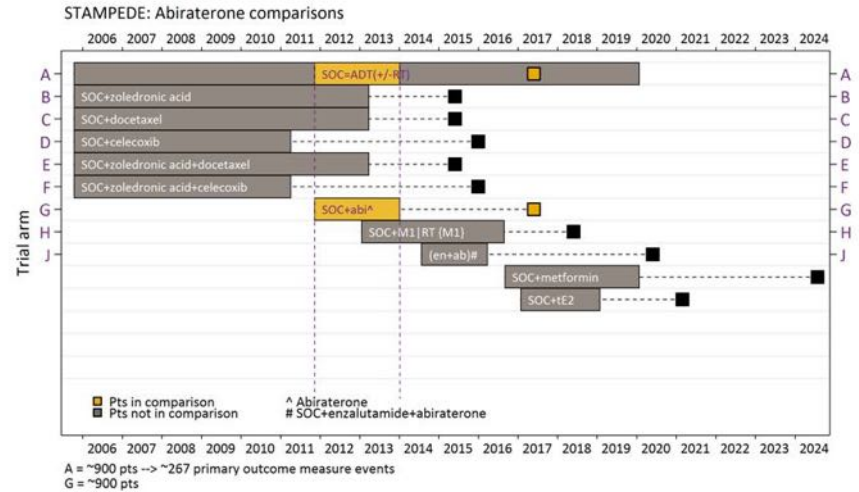
Accrual

Comparison

Open: Nov-2011

Closed: Jan-2014

Accrual: 1917



Number of patients

957 **A** Standard-of-care* (SOC)

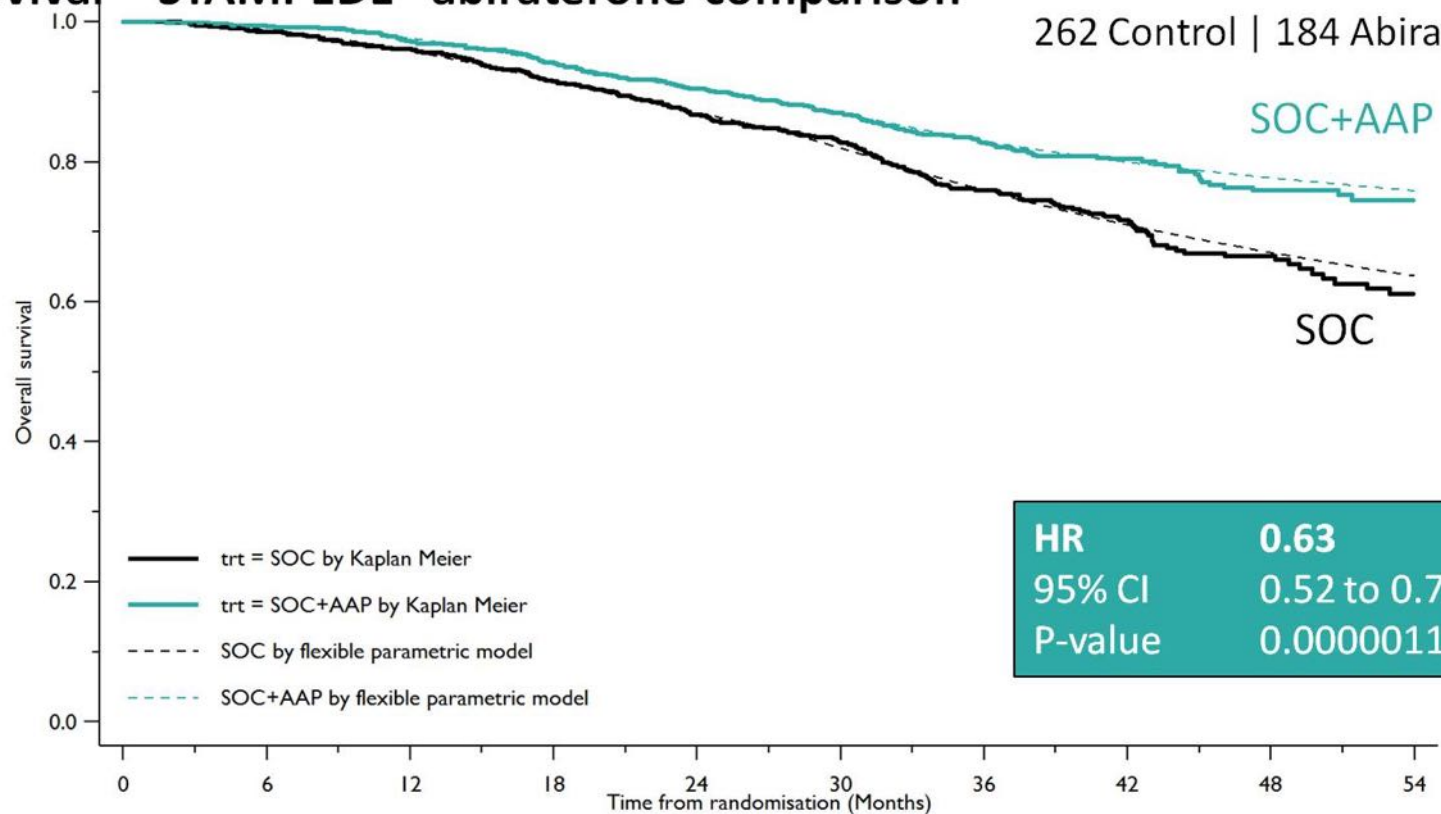
960 **G** SOC + abiraterone acetate + prednisolone (SOC+AAP)

*SOC = ADT ± RT

Overall Survival – STAMPEDE “abiraterone comparison”

Events

262 Control | 184 Abiraterone

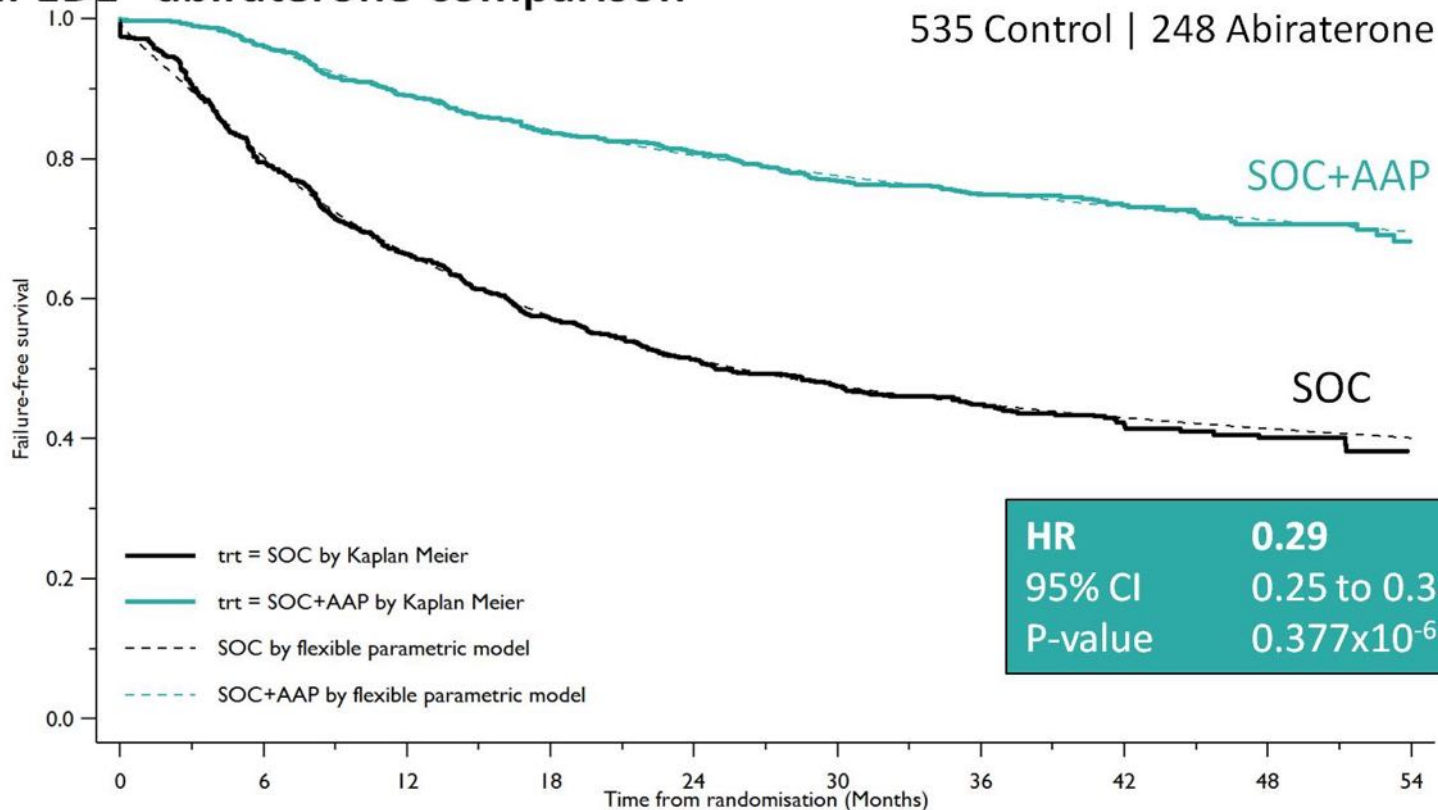


Number of patients (events)

	0	6	12	18	24	30	36	42	48	54
SOC	957	(37)	909	(88)	806	(92)	491	(36)	123	
SOC+AAP	960	(26)	917	(63)	840	(67)	541	(25)	161	

FFS – STAMPEDE “abiraterone comparison”

Events
535 Control | 248 Abiraterone



HR 0.29
95% CI 0.25 to 0.34
P-value 0.377x10⁻⁶¹

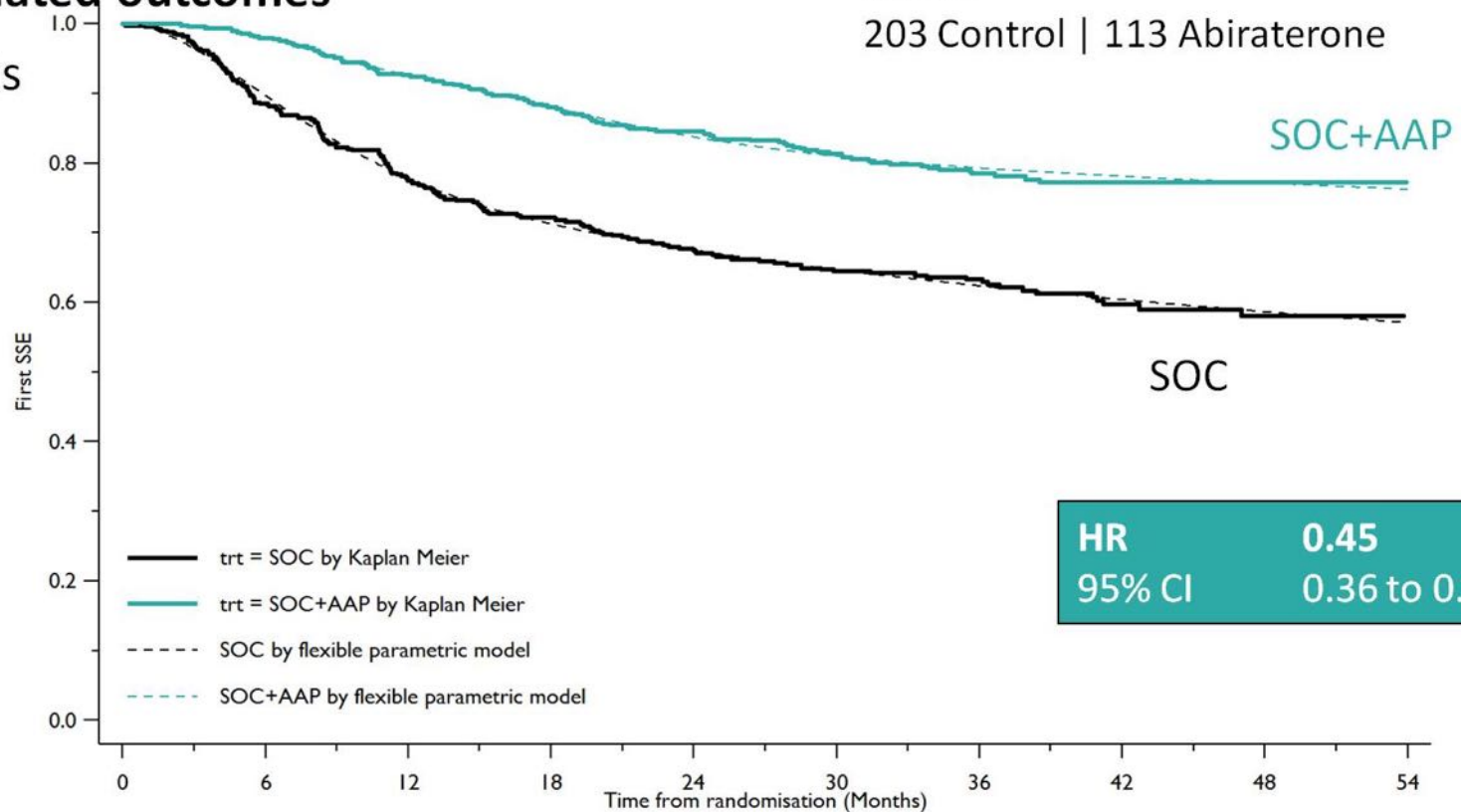
	0	6	12	18	24	30	36	42	48	54
SOC	957	(319)	625	(140)	476	(56)	284	(18)	62	
SOC+AAP	960	(104)	837	(75)	737	(52)	477	(14)	141	

Skeletal related outcomes

M1 patients

Events

203 Control | 113 Abiraterone



Number of patients (events)

SOC	502	(57)	436	(54)	377	(25)	330	(21)	291	(13)	263	(4)	182	(8)	93	(2)	47	(0)	18
SOC+AAP	500	(10)	482	(26)	448	(22)	411	(16)	381	(14)	335	(11)	234	(3)	135	(0)	76	(0)	27

Qualità dell'evidenza SIGN	Raccomandazione	Forza della raccomandazione clinica
Alta	Nei pazienti metastatici alla diagnosi, con malattia ad alto rischio, può essere presa in considerazione la possibilità di associare alla terapia androgenosoppressiva upfront, un trattamento con Abiraterone acetato e prednisone o prednisolone [135, 136]. N.B. Secondo le vigenti disposizioni, in questa fase di malattia, abiraterone è prescrivibile al momento solo in regime di “off-label”.	Positiva debole

La qualità viene definita alta in quanto l'evidenza è ottenuta da due studi prospettici e randomizzati che non presentano bias significativi.

European Commission Extends License for Janssen's ZYTIGA[®] Plus Prednisone / Prednisolone to Include Earlier Stage Prostate Cancer Patients

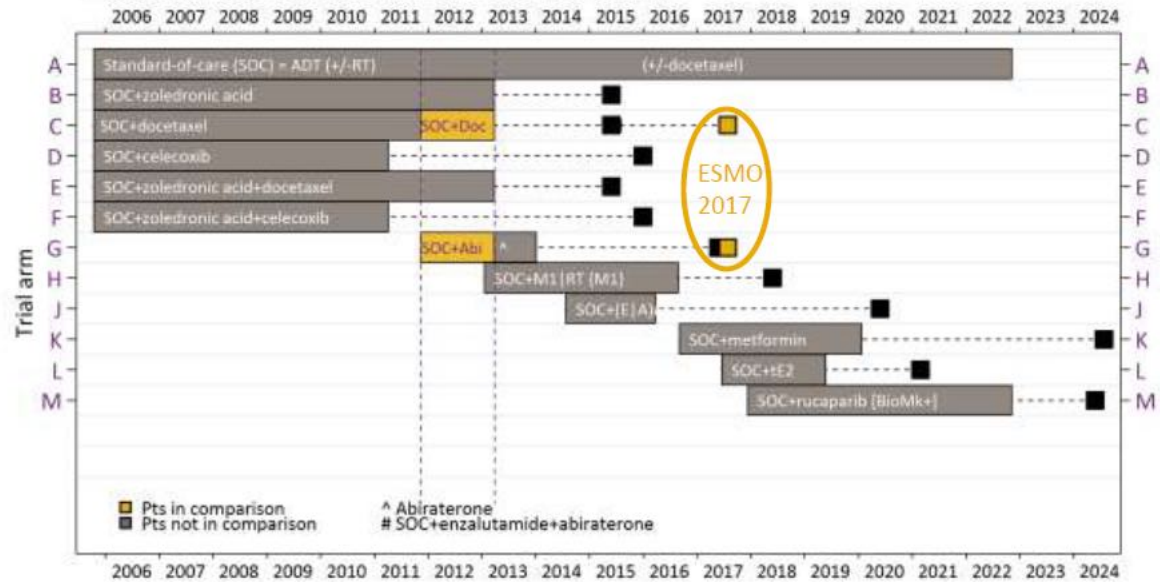
***Oral, Once-Daily Medication ZYTIGA[®] (abiraterone acetate)[®] Plus Prednisone / Prednisolone
Now Approved in Newly Diagnosed High-Risk Metastatic Hormone-Sensitive Prostate Cancer
(mHSPC)***

November 20, 2017 08:30 AM Eastern Standard Time

**What is better for hormone naïve patients starting
ADT? Doc or Abi???**

STAMPEDE: SOC+AAP vs SOC+DocP

STAMPEDE: Docetaxel vs abiraterone – direct comparison



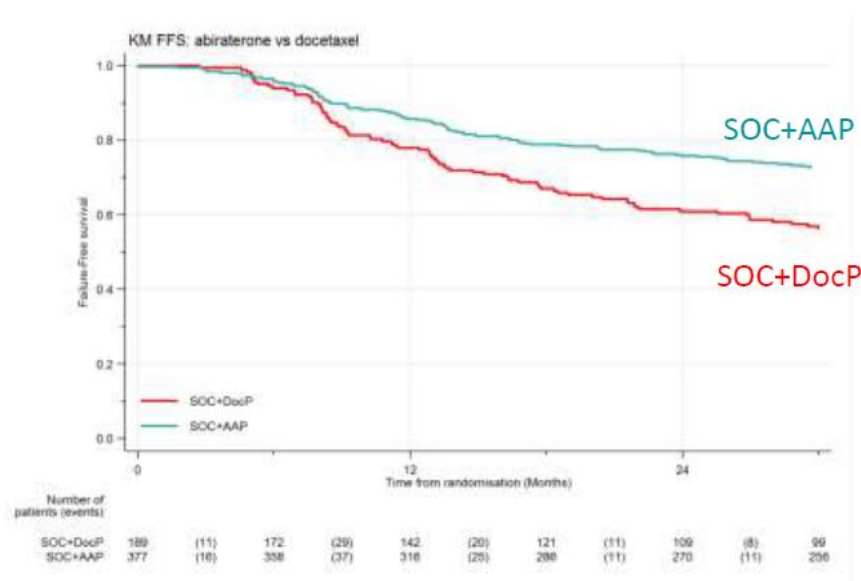
Recruitment: Nov-2011 to Mar-2013

Patients: 189 SOC+DocP
377 SOC+AAP

Reported: ESMO 2017
Published: (paper in development)

} 566 patients randomised contemporaneously to either research arm

Failure-free survival [driven by PSA failure]



Key:

HR<1 favours SOC+AAP

HR>1 favours SOC+DocP

Interactⁿ = test for interaction (heterogeneity of treatment effect)

	HR (95%CI)	P-val	Interact ⁿ test
--	------------	-------	----------------------------

All **0.51** (0.39 to 0.67) <0.001

M0 **0.34** (0.16 to 0.69) 0.003

M1 **0.56** (0.42 to 0.75) <0.001

0.17

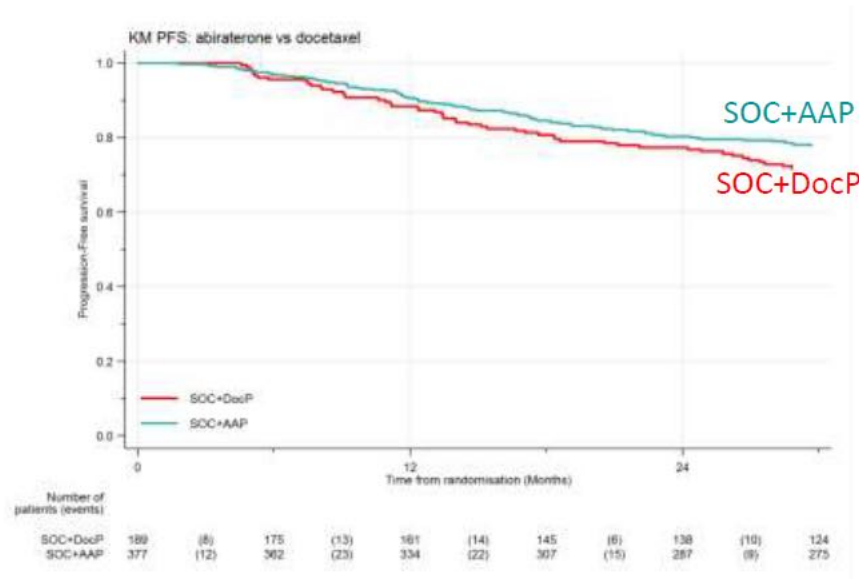
	SOC+DocP		SOC+AAP	
	Events	Pts	Events	Pts
All	97	189	122	377

M0 **18** 74 **13** 150

M1 **79** 115 **109** 227

Progression-free survival

PFS = FFS ignoring PSA failure



Key:

HR<1 favours SOC+AAP

HR>1 favours SOC+DocP

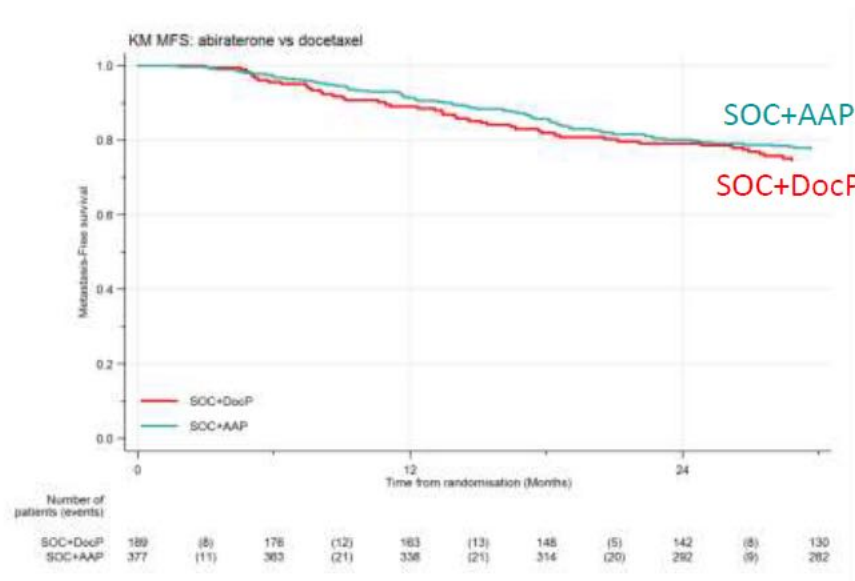
Interactⁿ = test for interaction (heterogeneity of treatment effect)

	HR (95%CI)	P-val	Interact ⁿ test
All	0.65 (0.48 to 0.88)	0.005	
M0	0.42 (0.17 to 1.05)	0.06	0.32
M1	0.69 (0.50 to 0.95)	0.02	

	SOC+DocP		SOC+AAP	
	Events	Pts	Events	Pts
All	72	189	103	377
M0	10	74	9	150
M1	62	115	94	227

Metastatic progression-free survival

MPFS = new or progression of metastases or death from any cause



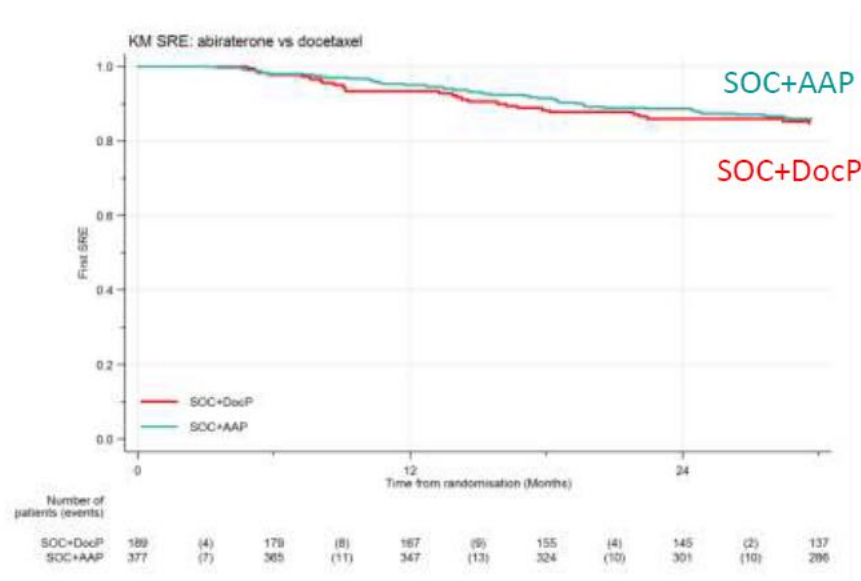
Key:
 HR<1 favours SOC+AAP
 HR>1 favours SOC+DocP

Interactⁿ = test for interaction (heterogeneity of treatment effect)

	HR (95%CI)	P-val	Interact ⁿ test
All	0.77 (0.57 to 1.03)	0.08	
M0	0.91 (0.42 to 2.01)	0.82	0.74
M1	0.76 (0.55 to 1.04)	0.09	

	SOC+DocP		SOC+AAP	
	Events	Pts	Events	Pts
All	71	189	118	377
M0	10	74	18	150
M1	61	115	100	227

Symptomatic skeletal events



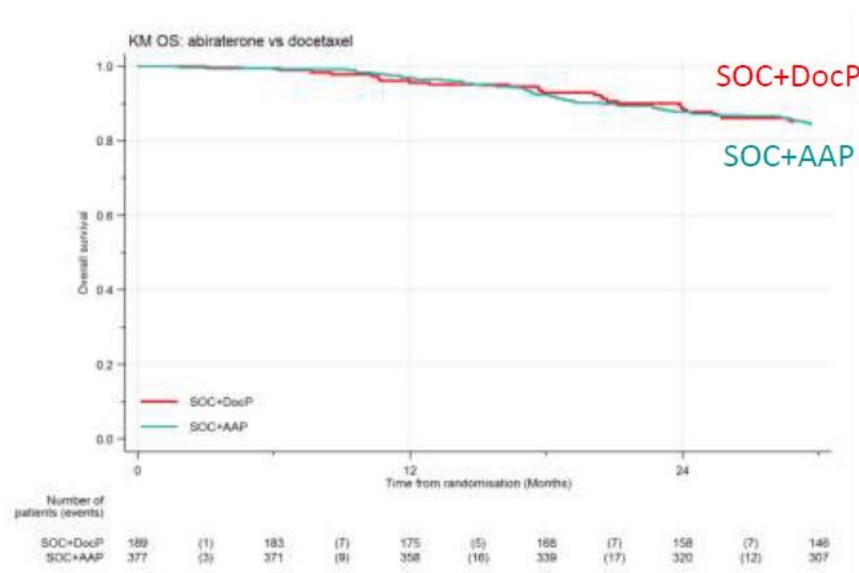
Key:
 HR<1 favours SOC+AAP
 HR>1 favours SOC+DocP

Interactⁿ = test for interaction (heterogeneity of treatment effect)

	HR (95%CI)	P-val	Interact ⁿ test
All	0.83 (0.55 to 1.25)	0.38	
M0	1.28 (0.24 to 6.67)	0.77	0.65
M1	0.82 (0.53 to 1.25)	0.35	

	SOC+DocP		SOC+AAP	
	Events	Pts	Events	Pts
All	36	189	63	377
M0	2	74	5	150
M1	34	115	58	227

Overall survival [primary outcome measure]



Key:

HR<1 favours SOC+AAP

HR>1 favours SOC+DocP

Interactⁿ = test for interaction (heterogeneity of treatment effect)

	HR (95%CI)	P-val	Interact ⁿ test
All	1.16 (0.82 to 1.65)	0.40	
M0	1.51 (0.58 to 3.93)	0.40	0.69
M1	1.13 (0.77 to 1.66)	0.53	

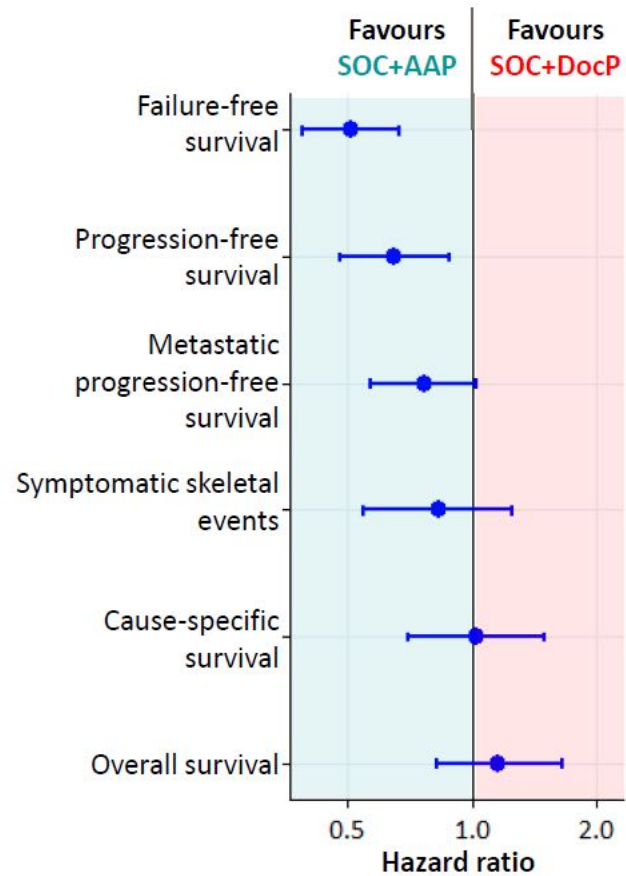
	SOC+DocP		SOC+AAP	
	Events	Pts	Events	Pts
All	44	189	105	377
M0	6	74	16	150
M1	38	115	89	227

Adverse events – worst toxicity ever

Safety population	SOC+DocP	SOC+AAP
Patients included in adverse event analysis	172 (91%)	373 (>99%)
Grade 1+ AE	172 (100%)	370 (99%)
Grade 3+ AE	86 (50%)	180 (48%)
Grade 3+ AEs by category (incl. expected AEs)		
Endocrine disorder (incl. hot flashes, impotence)	15 (9%)	49 (13%)
Febrile neutropenia	29 (17%)	3 (1%)
Neutropenia	22 (13%)	4 (1%)
Musculoskeletal disorder:	9 (5%)	33 (9%)
Cardiovascular disorder (incl. hypertension, MI, cardiac dysrhythmia):	6 (3%)	32 (9%)
Gastrointestinal disorder:	9 (5%)	28 (8%)
Hepatic disorder (incl. increased AST, increased ALT):	1 (1%)	32 (9%)
General disorder (incl. fatigue, oedema):	18 (10%)	21 (6%)
Respiratory disorder (incl. breathlessness):	12 (7%)	11 (3%)
Renal disorder	5 (3%)	20 (5%)
Lab abnormalities (incl. hypokalaemia):	9 (5%)	11 (3%)

Adverse events – worst toxicity ever

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Respiratory disorder (incl. breathlessness):	12 (7%)	11 (3%)
Renal disorder	5 (3%)	20 (5%)
Lab abnormalities (incl. hypokalaemia):	9 (5%)	11 (3%)



Summary

Head-to-head data in 566 pts (Nov-2011 to Mar-2013)

Strong evidence favouring AAP

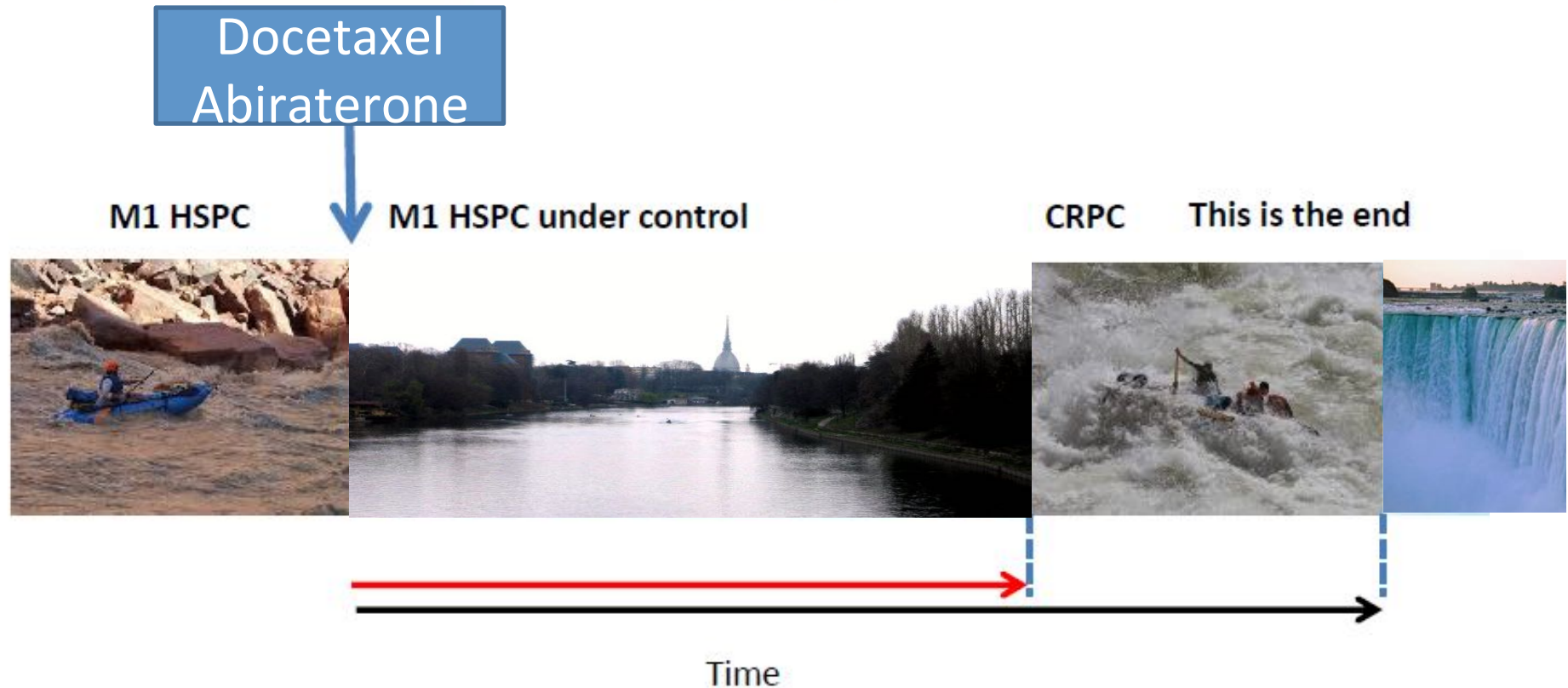
Weak evidence favouring AAP

No good evidence of a difference

→ Proportionately different time spent in each disease state

Toxicity profiles quite different and well known

M1 HSPC: the good «window» to use docetaxel or abiraterone



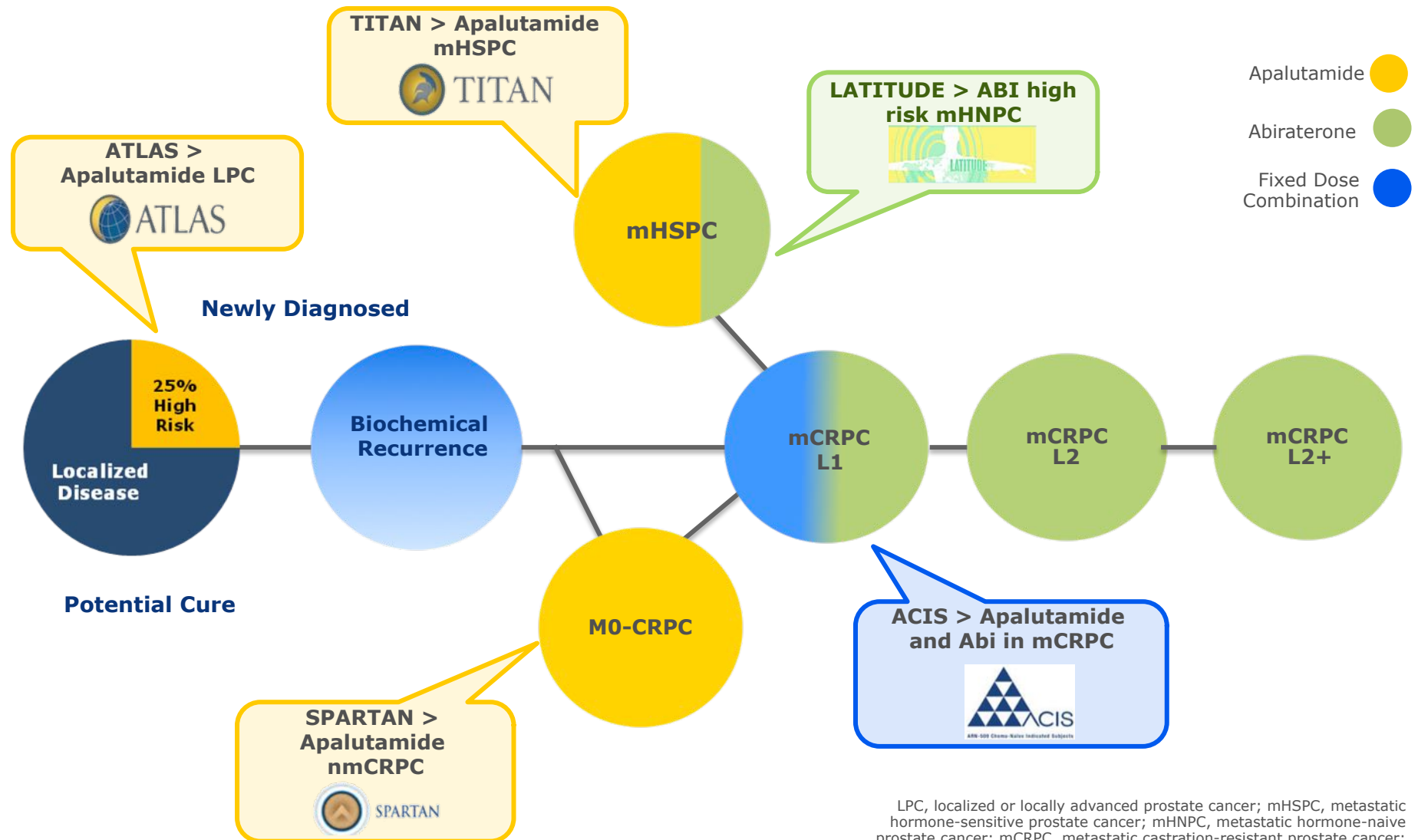
Phase 3 Ongoing Combination Therapy Trials in HSPC

Study	Identifier	Study Drugs	Pts (N)	Primary End Point	Status/Read Out
LATITUDE	NCT01715285	ADT ± AA	1209	rPFS, OS	ASCO 2017
STAMPEDE (Arm G)	NCT00268476	ADT ± AA	1800	OS	LBA ASCO 2017
PEACE-1	NCT01957436	ADT ± DOC vs ADT + AA ± DOC (± local RT)	916	PFS, OS	Recruiting/2020
STAMPEDE (Arm J)	NCT00268476	ADT ± AA + ENZ*	1800	OS	Closed-will report in 2-3 yrs
SWOG-1216	NCT01809691	ADT + TAK-700 vs ADT + BIC	1304	OS	Recruiting/2027
ENZAMET	NCT02446405	ADT + ENZ vs ADT + antiandrogen	1100	OS	Recruiting/2020
TITAN	NCT02489318	ADT ± APA (ARN 509)	1000	rPFS, OS	Recruiting/ 2021
ARCHES	NCT02677896	ADT ± ENZ	1100	rPFS	Recruiting/ 2023
ARASENS	NCT02799602	ADT + DOC ± ODM-201	1300	OS	Recruiting/2022

*Includes upfront Doc

Modified from and courtesy of K. Fizazi

Phase 3 Studies with ARTA



LPC, localized or locally advanced prostate cancer; mHSPC, metastatic hormone-sensitive prostate cancer; mHNPC, metastatic hormone-naive prostate cancer; mCRPC, metastatic castration-resistant prostate cancer; M0-CRPC, non-metastatic CRPC