Supplementary Table 1. Median PFS and OS in previously published trials

			Median PFS, months (95% CI)	HR	**Median OS, months (95% CI)**	HR
FALCON[a 1]	All patients	Fulvestrant	16·6	0·797 (95% CI 0·637–0·999; p=0·0486)	-	0.88 (95% CI 0.63–1.22, p=0.43)
		Anastrozole	13·8		-	
	VM	Fulvestrant	13·8	0·99 (95% CI 0·74–1·33)	-	-
		Anastrozole	15·9		-	
	Non-VM	Fulvestrant	22·3	0·59 (95% CI 0·42–0·84)	-	-
		Anastrozole	13·8		-	
FIRST [2–4]	All patients	Fulvestrant	23·4	0·66 (95% CI 0·47–0·92; p=0·01)	54·1	0·70 (95% CI 0·50–0·98; p=0·04)
		Anastrozole	13·1		48·4	
	VM	Fulvestrant	9·8	0·82 (95% CI 0·54–1·26)	32·1	0·86 (95% CI 0·56–1·34)
		Anastrozole	9·9		38·5	
	Non-VM	Fulvestrant	34·0	0·58 (95% CI 0·34–0·99)	76·6	0·68 (95% CI 0·40–1·18)
		Anastrozole	21·3		60·9	
PALOMA-1 [5]	All patients	Palbociclib plus letrozole	20·2	0·488 (95% CI 0·319–0·748; p=0.0004)	37.5	0.90 (95% CI 0.62–1.29; p=0.28)
		Letrozole monotherapy	10·2		34.5	
PALOMA-2 [6]	All patients	Palbociclib plus letrozole	24·8	0·58 (95% CI 0·46–0·72; p<0·001)	-	-
		Letrozole monotherapy	14·5		-	-
	VM	Palbociclib plus letrozole	-	0·63 (95% CI 0·47–0·85)	-	-
		Letrozole monotherapy	-		-	-
	Non-VM	Palbociclib plus letrozole	-	0·50 (95% CI 0·36–0·70)	-	-
		Letrozole monotherapy	-		-	-
PALOMA-3 [7,8]	All patients	Palbociclib plus fulvestrant	9·2	0·42 (95% CI 0·32–0·56; p<0·001)	34·9	0·81 (95% CI 0·64–1·03; p=0·09)
		Fulvestrant plus placebo	3·8		28·0	
	VM	Palbociclib plus fulvestrant	-	0·45 (95% CI 0·32–0·63)	27·6	0·85 (95% CI 0·64–1·13)

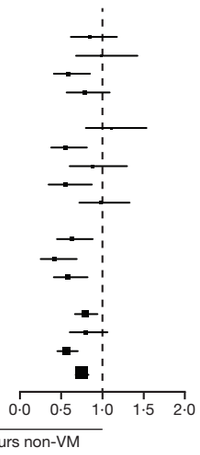
		Fulvestrant plus placebo	-		24·7	
	Non-VM	Palbociclib plus fulvestrant	-	0·36 (95% CI 0·22–0·60)	-	-
		Fulvestrant plus placebo	-		-	-
MONARCH-2 [9]	All patients	Fulvestrant plus abemaciclib	16·4	0·553 (95% CI 0·449–0·681; p<0·001)	46·7	0·757 (95% CI 0·606–0·945; p=0·01)
	All patients	Fulvestrant plus placebo	9·3		37·3	
MONALEESA-3 [10,11]	All patients	Fulvestrant plus ribociclib	20·5	0·593 (95% CI 0·480–0·732; p<0·001)	NR	0·724 (95% CI 0·568–0·924; p=0·00455)
		Fulvestrant plus placebo	12·8		40·0	
	First-line	Fulvestrant plus ribociclib	33·6	0·546 (95% CI 0·415–0·718)	NR	0·700 (95% CI 0·479–1·021)
		Fulvestrant plus placebo	19·2		45·1	

[a]Kaplan Meier curves and median overall survival could not be calculated due to insufficient follow-up time (31% maturity).

a

PFS (First-line)

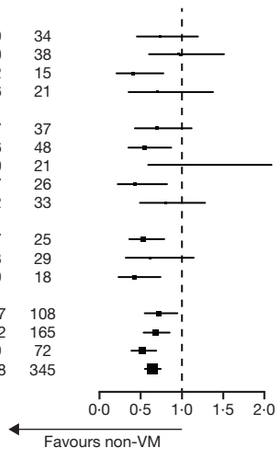
Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
SERM					
EORTC	83	95	72	78	0·85 (0·62–1·18)
0027	73	71	59	54	0·98 (0·68–1·43)
0030	80	80	67	52	0·59 (0·41–0·85)
0025	74	135	58	95	0·78 (0·57–1·09)
AI					
EORTC	80	88	68	78	1·11 (0·80–1·54)
0027	55	98	45	65	0·55 (0·38–0·81)
0030	77	73	57	49	0·88 (0·60–1·30)
FIRST	57	45	48	30	0·55 (0·35–0·87)
FALCON	119	113	87	79	0·98 (0·72–1·33)
SERD					
CONFIRM	90	72	7	13	0·63 (0·45–0·88)
FIRST	46	54	37	26	0·42 (0·25–0·69)
FALCON	135	95	92	51	0·58 (0·41–0·82)
Full models*					
SERM	310	381	256	279	0·79 (0·67–0·94)
AI	388	417	305	301	0·80 (0·60–1·06)
SERD (500)	271	221	136	90	0·56 (0·45–0·70)
All	969	1019	697	670	0·75 (0·68–0·83)



*Random effect for trial were fitted to AI and all data

OS (First-line)†

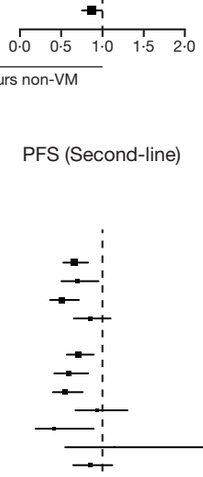
Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
SERM					
EORTC	83	95	39	34	0·77 (0·48–1·22)
0027	73	71	40	38	0·99 (0·63–1·54)
0030	80	80	32	15	0·44 (0·24–0·81)
0025	74	135	16	21	0·73 (0·38–1·41)
AI					
EORTC	80	88	37	37	0·73 (0·46–1·15)
0027	55	98	36	48	0·58 (0·38–0·90)
0030	77	73	20	21	1·14 (0·62–2·12)
FIRST	57	45	47	26	0·46 (0·25–0·85)
FALCON	119	113	42	33	0·83 (0·52–1·31)
SERD					
CONFIRM	90	72	17	25	0·56 (0·39–0·82)
FIRST	46	54	33	29	0·64 (0·35–1·17)
FALCON	135	95	49	18	0·45 (0·26–0·77)
Full models*					
SERM	310	381	127	108	0·75 (0·58–0·97)
AI	388	417	182	165	0·70 (0·56–0·88)
SERD (500)	271	221	99	72	0·55 (0·42–0·72)
All	969	1019	408	345	0·67 (0·58–0·77)



*Fixed effects for trial were fitted in all models

DoCB (First-line)

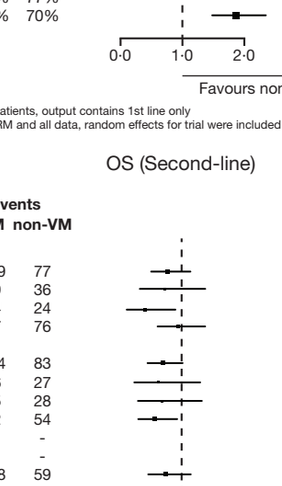
Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
SERM					
EORTC	55	66	45	52	0·95 (0·64–1·43)
0027	38	42	24	27	1·26 (0·73–2·19)
0030	27	47	16	20	0·79 (0·41–1·53)
0025	46	87	30	50	0·78 (0·49–1·22)
AI					
EORTC	64	66	53	59	1·02 (0·70–1·48)
0027	21	69	12	36	1·06 (0·55–2·05)
0030	46	43	26	22	0·82 (0·46–1·45)
FIRST	39	30	31	18	0·53 (0·29–0·95)
FALCON	87	85	58	55	1·05 (0·73–1·52)
SERD					
CONFIRM	29	42	6	10	1·15 (0·66–2·01)
FIRST	28	46	19	19	0·55 (0·29–1·04)
FALCON	97	83	65	40	0·61 (0·41–0·90)
Full models*					
SERM	166	242	115	149	0·92 (0·72–1·18)
AI	257	293	180	190	0·92 (0·75–1·14)
SERD (500)	154	171	90	69	0·71 (0·53–0·94)
All	577	706	385	408	0·87 (0·75–1·00)



*Random effect for trial were fitted to all

CBR (First-line)

Trial	n VM	n non-VM	CBR VM*	CBR non-VM*	Odds ratio (95% CI)
SERM					
EORTC	82	89	67%	74%	1·41 (0·73–2·73)
0027	73	71	52%	59%	1·33 (0·69–2·58)
0030	80	80	34%	59%	2·80 (1·47–5·32)
0025	74	135	62%	64%	1·10 (0·61–1·98)
AI					
EORTC	77	82	83%	80%	0·84 (0·37–1·88)
0027	55	98	38%	70%	3·85 (1·92–7·72)
0030	77	73	60%	59%	0·97 (0·50–1·85)
FIRST	119	113	73%	74%	1·07 (0·59–1·91)
FALCON	58	45	67%	67%	0·97 (0·43–2·23)
SERD					
CONFIRM	135	95	72%	87%	2·71 (1·33–5·52)
FIRST	48	54	58%	85%	4·11 (1·60–10·57)
FALCON	90	72	32%	58%	2·94 (1·55–5·61)
Full models*	**				
SERM	309	375	54%	65%	1·53 (1·11–2·10)
AI	386	411	67%	71%	1·28 (0·73–2·22)
SERD (500)	273	221	56%	77%	3·06 (2·00–4·68)
All	1007	968	60%	70%	1·66 (1·37–2·02)

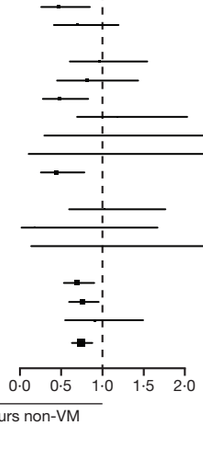


*CONFIRM recruited first- and second-line line patients, output contains 1st line only
**Fixed effect model was fitted to the SERD, SERM and all data, random effects for trial were included in the models for AI

b

PFS (Second-line)

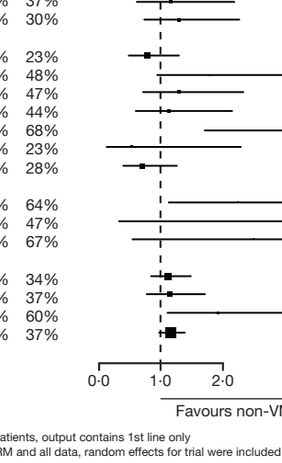
Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
AI					
0048	194	142	188	125	0·66 (0·53–0·83)
0020	74	109	67	88	0·69 (0·50–0·95)
0021	75	93	72	76	0·51 (0·37–0·72)
SOFEA	145	104	136	97	0·85 (0·65–1·10)
SERD250					
0048	195	150	179	129	0·71 (0·57–0·90)
0020	67	93	61	71	0·59 (0·42–0·83)
0021	89	88	84	69	0·55 (0·40–0·76)
CONFIRM	81	71	76	66	0·94 (0·67–1·31)
FINDER1	24	19	19	10	0·41 (0·19–0·90)
FINDER2	33	13	25	10	1·15 (0·55–2·41)
SOFEA	143	88	139	82	0·85 (0·65–1·12)
SERD500					
CONFIRM	89	55	74	49	0·77 (0·54–1·11)
FINDER1	26	19	19	12	0·67 (0·31–1·45)
FINDER2	36	9	25	6	0·57 (0·22–1·50)
Full models*					
AI	488	448	463	386	0·68 (0·60–0·79)
SERD (250)	632	522	583	437	0·72 (0·64–0·82)
SERD (500)	151	83	118	67	0·73 (0·53–1·00)
All	1271	1053	1164	890	0·71 (0·65–0·77)



*Fixed effect models fitted to all

OS (Second-line)

Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
AI					
0048	194	142	119	77	0·83 (0·62–1·11)
0020	74	109	29	36	0·79 (0·48–1·29)
0021	75	93	34	24	0·55 (0·32–0·92)
SOFEA	145	104	97	76	0·95 (0·70–1·29)
SERD250					
0048	195	150	124	83	0·77 (0·58–1·01)
0020	67	93	26	27	0·72 (0·42–1·23)
0021	89	88	35	28	0·76 (0·46–1·25)
CONFIRM	81	71	72	54	0·66 (0·47–0·94)
FINDER1	-	-	-	-	-
FINDER2	-	-	-	-	-
SOFEA	143	88	108	59	0·81 (0·59–1·11)
SERD500					
CONFIRM	89	55	64	40	0·75 (0·51–1·12)
FINDER1	-	-	-	-	-
FINDER2	-	-	-	-	-
Full models*					
AI	488	448	279	213	0·82 (0·69–0·99)
SERD (250)	575	490	365	251	0·75 (0·64–0·88)
SERD (500)	89	55	64	40	0·75 (0·51–1·12)
All	1152	993	708	504	0·78 (0·69–0·87)



*Fixed effects models were fitted to all data·

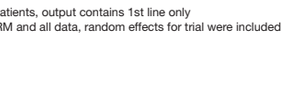
DoCB (Second-line)

Trial	n VM	n non-VM	Events VM	Events non-VM	HR (95% CI)
AI					
0048	50	35	45	30	0·91 (0·57–1·45)
0020	31	50	24	33	0·67 (0·39–1·14)
0021	25	34	22	24	0·47 (0·26–0·86)
SOFEA	36	31	32	24	0·71 (0·42–1·21)
SERD250					
0048	53	34	48	30	0·97 (0·61–1·56)
0020	23	45	19	30	0·81 (0·45–1·44)
0021	36	41	31	24	0·48 (0·28–0·84)
CONFIRM	33	31	28	27	1·20 (0·70–2·04)
FINDER1	6	13	1	5	2·58 (0·30–22·28)
FINDER2	12	3	5	1	0·93 (0·11–8·03)
SOFEA	49	24	45	18	0·45 (0·26–0·79)
SERD500					
CONFIRM	39	35	26	29	1·03 (0·60–1·78)
FINDER1	12	9	5	3	0·19 (0·02–1·68)
FINDER2	16	6	6	3	0·70 (0·14–3·56)
Full models*					
AI	142	150	123	111	0·70 (0·54–0·91)
SERD (250)	212	191	177	135	0·76 (0·60–0·96)
SERD (500)	67	50	37	35	0·91 (0·55–1·51)
All	421	391	337	281	0·75 (0·64–0·89)

*Fixed effects models were fitted to all data·

CBR (Second-line)

Trial	n VM	n non-VM	CBR VM*	CBR non-VM*	Odds ratio (95% CI)
AI					
0048	194	142	26%	25%	0·94 (0·57–1·55)
0020	74	109	42%	46%	1·18 (0·65–2·13)
0021	75	93	33%	37%	1·15 (0·61–2·18)
SOFEA	142	102	25%	30%	1·29 (0·73–2·27)
SERD250					
0048	195	150	27%	23%	0·79 (0·48–1·29)
0020	67	93	34%	48%	1·79 (0·94–3·43)
0021	89	88	40%	47%	1·28 (0·71–2·33)
CONFIRM	81	71	41%	44%	1·13 (0·59–2·15)
FINDER1	24	19	25%	68%	6·50 (1·71–24·77)
FINDER2	33	13	36%	23%	0·52 (0·12–2·29)
SOFEA	139	87	35%	28%	0·70 (0·39–1·26)
SERD500					
CONFIRM	89	55	44%	64%	2·24 (1·12–4·48)
FINDER1	26	19	46%	47%	1·05 (0·32–3·44)
FINDER2	36	9	44%	67%	2·50 (0·54–11·59)
Full models*	**				
AI	485	446	29%	34%	1·11 (0·84–1·48)
SERD (250)	628	521	34%	37%	1·15 (0·77–1·71)
SERD (500)	151	83	44%	60%	1·93 (1·10–3·36)
All	1050	1264	33%	37%	1·16 (0·97–1·38)



*CONFIRM recruited first- and second-line line patients, output contains 1st line only
**Fixed effect model was fitted to the SERD, SERM and all data, random effects for trial were included in the models for AI

Supplementary Figure 1: Clinical outcomes for VM versus non-VM by endocrine agent and study

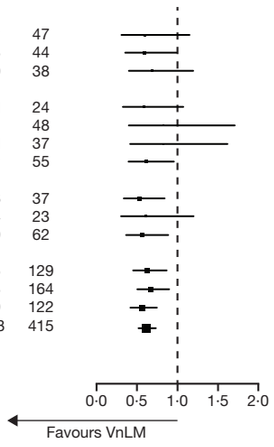
a Forest plots of PFS, OS, DoCB and CBR in the first-line setting. **b** Forest plots of PFS, OS, DoCB and CBR in the second-line setting.

AI, aromatase inhibitor; CBR, clinical benefit rate; DoCB, duration of clinical benefit; HR, hazard ratio; n, number of patients; non-VM, non-visceral metastases; PFS, progression-free survival; OR, odds ratio; OS, overall survival; SERD, selective estrogen receptor degrader; SERM, selective estrogen receptor modulator; VLM, visceral liver metastases; VM, visceral metastases; VnLM, visceral non-liver metastases.

a

PFS (First-line)

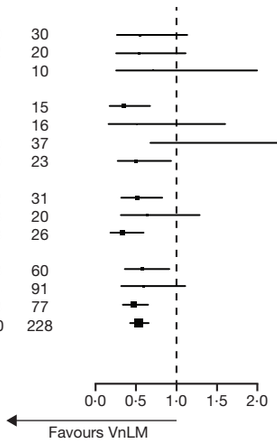
Trial	n VLM	n VnLM	Events VLM	Events VnLM	HR (95% CI)
SERM					
0027	15	58	12	47	0·60 (0·31–1·15)
0030	26	54	23	44	0·60 (0·36–0·99)
0025	23	51	20	38	0·70 (0·40–1·20)
AI					
0027	24	31	21	24	0·60 (0·33–1·08)
0030	13	64	9	48	0·83 (0·40–1·71)
FIRST	13	44	11	37	0·83 (0·42–1·62)
FALCON	41	78	32	55	0·62 (0·40–0·96)
SERD (500)					
CONFIRM	47	43	46	37	0·54 (0·34–0·85)
FIRST	14	32	14	23	0·61 (0·31–1·20)
FALCON	38	97	30	62	0·57 (0·37–0·89)
Full models*					
SERM	64	163	55	129	0·63 (0·46–0·87)
AI	91	217	73	164	0·68 (0·51–0·90)
SERD	99	172	90	122	0·56 (0·42–0·75)
All	254	552	218	415	0·62 (0·52–0·74)



*Fixed effect for trial were fitted in all models

OS (First-line)

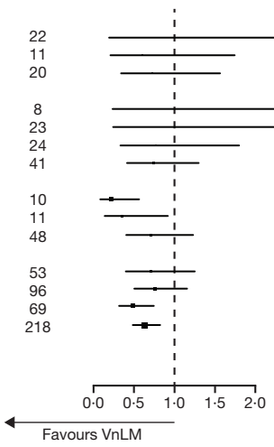
Trial	n VLM	n VnLM	Events VLM	Events VnLM	HR (95% CI)
SERM					
0027	15	58	10	30	0·56 (0·27–1·14)
0030	26	54	12	20	0·54 (0·26–1·12)
0025	23	51	6	10	0·72 (0·26–2·00)
AI					
0027	24	31	21	15	0·35 (0·18–0·68)
0030	13	64	4	16	0·52 (0·17–1·61)
FIRST	13	44	10	37	1·39 (0·68–2·84)
FALCON	41	78	19	23	0·51 (0·28–0·94)
SERD (500)					
CONFIRM	47	43	42	31	0·52 (0·32–0·83)
FIRST	14	32	13	20	0·64 (0·32–1·29)
FALCON	38	97	23	26	0·34 (0·19–0·60)
Full models*					
SERM	64	163	28	60	0·58 (0·37–0·92)
AI	91	217	54	91	0·60 (0·32–1·12)
SERD	99	172	78	77	0·47 (0·34–0·66)
All	254	552	160	228	0·54 (0·43–0·66)



*Random effect for trial were fitted in model for AI

DoCB (First-line)

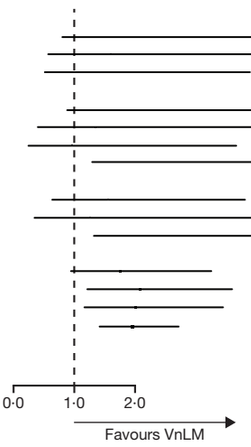
Trial	n VLM	n VnLM	Events VLM	Events VnLM	HR (95% CI)
SERM					
0027	5	33	2	22	0·87 (0·19–3·84)
0030	7	20	5	11	0·61 (0·21–1·77)
0025	13	33	10	20	0·74 (0·35–1·59)
AI					
0027	6	15	4	8	0·80 (0·24–2·71)
0030	7	39	3	23	0·84 (0·25–2·90)
FIRST	9	30	7	24	0·79 (0·34–1·83)
FALCON	24	63	17	41	0·75 (0·42–1·32)
SERD (500)					
CONFIRM	13	16	13	10	0·22 (0·08–0·57)
FIRST	8	20	8	11	0·36 (0·14–0·93)
FALCON	21	76	17	48	0·72 (0·41–1·25)
Full models*					
SERM	25	86	17	53	0·72 (0·40–1·27)
AI	46	147	31	96	0·77 (0·51–1·17)
SERD	42	112	38	69	0·49 (0·32–0·76)
All	113	345	86	218	0·64 (0·49–0·84)



*Fixed effect for trial were fitted in all models

CBR (First-line)

Trial	n VLM	n VnLM	CBR VLM*	CBR VnLM*	Odds ratio (95% CI)
SERM					
0027	15	58	33%	57%	2·64 (0·80–8·70)
0030	26	54	27%	37%	1·60 (0·57–4·46)
0025	23	51	57%	65%	1·41 (0·52–3·85)
AI					
0027	24	31	25%	48%	2·81 (0·88–8·99)
0030	13	64	54%	61%	1·34 (0·40–4·44)
FIRST	12	44	69%	68%	0·95 (0·25–3·63)
FALCON	41	78	59%	81%	2·98 (1·29–6·88)
SERD (500)					
CONFIRM	47	43	28%	37%	1·55 (0·64–3·77)
FIRST	14	32	57%	62%	1·25 (0·35–4·49)
FALCON	38	97	55%	78%	2·93 (1·31–6·53)
Full models*					
SERM	64	163	39%	53%	1·74 (0·94–3·22)
AI	91	217	51%	68%	2·07 (1·21–3·56)
SERD	99	172	42%	65%	1·99 (1·16–3·41)
All	552	254	44%	62%	1·95 (1·41–2·69)

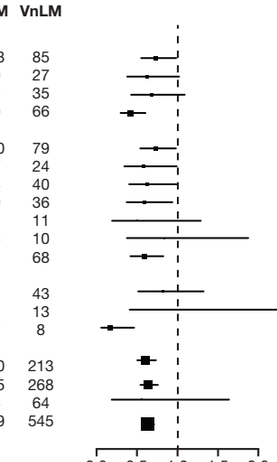


*Fixed effect for trial were fitted in all models

b

PFS (Second-line)

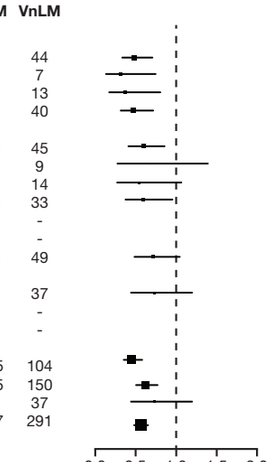
Trial	n VLM	n VnLM	Events VLM	Events VnLM	HR (95% CI)
AI					
0048	106	88	103	85	0·74 (0·55–0·99)
0020	42	32	40	27	0·62 (0·38–1·02)
0021	38	37	37	35	0·68 (0·43–1·09)
SOFEA	72	73	70	66	0·43 (0·30–0·61)
SERD250					
0048	109	86	100	79	0·73 (0·54–0·98)
0020	39	28	37	24	0·58 (0·34–0·99)
0021	44	45	44	40	0·63 (0·40–0·99)
CONFIRM	41	40	40	36	0·59 (0·37–0·94)
FINDER1	9	15	8	11	0·50 (0·19–1·29)
FINDER2	19	14	15	10	0·84 (0·38–1·87)
SOFEA	72	71	71	68	0·59 (0·42–0·83)
SERD500					
CONFIRM	36	53	31	43	0·83 (0·52–1·32)
FINDER1	9	17	6	13	1·10 (0·41–2·94)
FINDER2	19	17	17	8	0·17 (0·06–0·47)
Full models*					
AI	258	230	250	213	0·61 (0·51–0·74)
SERD (250)	333	299	315	268	0·64 (0·54–0·76)
SERD (500)	64	87	54	64	0·56 (0·19–1·64)
All	655	616	619	545	0·63 (0·56–0·71)



*Random effects for trial were fitted in SERD (500) model.

OS (Second-line)

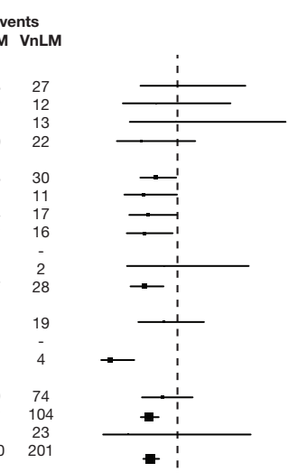
Trial	n VLM	n VnLM	Events VLM	Events VnLM	HR (95% CI)
AI					
0048	106	88	75	44	0·49 (0·34–0·71)
0020	42	32	22	7	0·32 (0·13–0·75)
0021	38	37	21	13	0·37 (0·17–0·81)
SOFEA	72	73	57	40	0·48 (0·32–0·72)
SERD250					
0048	109	86	79	45	0·59 (0·41–0·86)
0020	39	28	17	9	0·62 (0·28–1·39)
0021	44	45	21	14	0·54 (0·27–1·07)
CONFIRM	41	40	39	33	0·60 (0·38–0·96)
FINDER1	-	-	-	-	-
FINDER2	-	-	-	-	-
SOFEA	72	71	59	49	0·71 (0·49–1·05)
SERD500					
CONFIRM	36	53	27	37	0·73 (0·44–1·20)
FINDER1	9	17	6	13	-
FINDER2	19	17	17	8	-
Full models*					
AI	258	230	175	104	0·45 (0·35–0·58)
SERD (250)	305	270	215	150	0·63 (0·51–0·77)
SERD (500)	36	53	27	37	0·73 (0·44–1·20)
All	599	553	417	291	0·56 (0·48–0·65)



*Fixed effect models fitted to all

DoCB (Second-line)

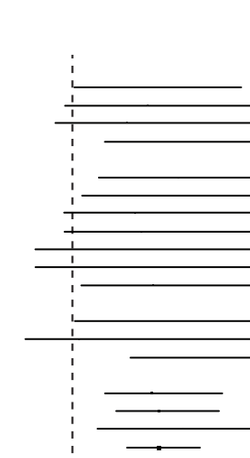
Trial	n VLM	n non-VM	Events VLM	Events VnLM	HR (95% CI)
AI					
0048	21	29	18	27	1·00 (0·54–1·83)
0020	14	17	12	12	0·73 (0·33–1·65)
0021	10	15	9	13	0·98 (0·41–2·33)
SOFEA	10	26	10	22	0·55 (0·25–1·22)
SERD250					
0048	20	33	18	30	0·73 (0·54–0·98)
0020	9	14	8	11	0·58 (0·34–0·99)
0021	14	22	14	17	0·63 (0·40–0·99)
CONFIRM	13	20	12	16	0·59 (0·37–0·94)
FINDER1	-	-	-	-	-
FINDER2	6	6	3	2	0·84 (0·38–1·87)
SOFEA	18	31	17	28	0·59 (0·42–0·83)
SERD500					
CONFIRM	11	28	7	19	0·83 (0·52–1·32)
FINDER1	-	-	-	-	-
FINDER2	4	12	2	4	0·17 (0·06–0·47)
Full models*					
AI	55	87	49	74	0·81 (0·56–1·18)
SERD (250)	80	126	72	104	0·65 (0·55–0·77)
SERD (500)	15	40	9	23	0·40 (0·08–1·90)
All	150	253	130	201	0·67 (0·58–0·77)



*Random effects for trial were fitted in model for SERD (500).

CBR (Second-line)

Trial	n VLM	n VnLM	CBR VLM*	CBR VnLM*	Odds ratio (95% CI)
AI					
0048	106	88	20%	33%	1·99 (1·04–3·82)
0020	42	32	33%	53%	2·27 (0·88–5·83)
0021	38	37	26%	41%	1·91 (0·72–5·07)
SOFEA	71	71	14%	37%	3·52 (1·54–8·04)
SERD250					
0048	109	86	18%	38%	2·77 (1·44–5·31)
0020	39	28	23%	50%	3·33 (1·17–9·53)
0021	44	45	32%	49%	2·05 (0·87–4·86)
CONFIRM	41	40	32%	50%	2·15 (0·87–5·32)
FINDER1	-	9	15	11%	33%	4·00 (0·39–41·51)
FINDER2	19	14	32%	43%	1·63 (0·39–6·82)
SOFEA	70	69	26%	45%	2·36 (1·15–4·82)
SERD500					
CONFIRM	36	53	31%	53%	2·55 (1·04–6·20)
FINDER1	-	9	17	44%	47%	1·11 (0·22–5·63)
FINDER2	19	17	21%	71%	9·00 (1·97–41·08)
Full models*		**			
AI	257	228	21%	38%	2·33 (1·55–3·50)
SERD (250)	331	297	24%	44%	2·45 (1·73–3·45)
SERD (500)	64	87	30%	55%	2·85 (1·42–5·71)
All	612	652	24%	43%	2·45 (1·91–3·13)



*Fixed effect model was fitted to all models

Supplementary Figure 2: Clinical outcomes for VnLM and VLM by endocrine agent and study

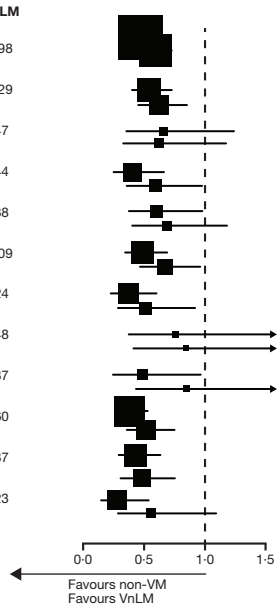
a Forest plots of PFS, OS, DoCB and CBR in the first-line setting. **b** Forest plots of PFS, OS, DoCB and CBR second-line setting.

AI, aromatase inhibitor; CBR, clinical benefit rate; DoCB, duration of clinical benefit; HR, hazard ratio; n, number of patients; non-VM, non-visceral metastases; PFS, progression-free survival; OR, odds ratio; OS, overall survival; SERD, selective estrogen receptor degrader; SERM, selective estrogen receptor modulator; VLM, visceral liver metastases; VM, visceral metastases; VnLM, visceral non-liver metastases.

a

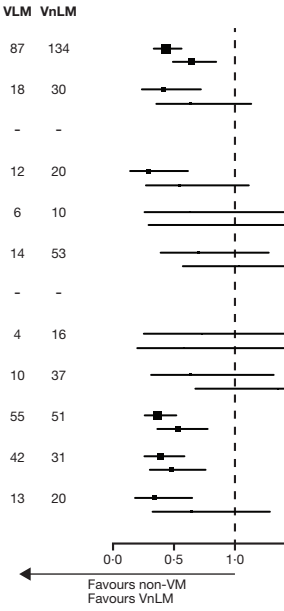
PFS (First-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
First-line							
non-VM vs VLM	628	175	377	430	156	298	0·47 (0·39–0·57)
VnLM vs VLM							0·60 (0·49–0·73)
SERM							
non-VM vs VLM	286	64	163	201	55	129	0·54 (0·40–0·73)
VnLM vs VLM							0·62 (0·45–0·86)
0027							
non-VM vs VLM	71	15	58	54	12	47	0·66 (0·35–1·25)
VnLM vs VLM							0·62 (0·33–1·18)
0030							
non-VM vs VLM	80	26	54	52	23	44	0·41 (0·25–0·67)
VnLM vs VLM							0·59 (0·36–0·98)
0025							
non-VM vs VLM	135	23	51	95	20	38	0·61 (0·37–0·98)
VnLM vs VLM							0·69 (0·40–1·19)
AI							
non-VM vs VLM	216	50	139	144	41	109	0·49 (0·34–0·69)
VnLM vs VLM							0·67 (0·47–0·97)
0027							
non-VM vs VLM	98	24	31	65	21	24	0·37 (0·22–0·60)
VnLM vs VLM							0·51 (0·28–0·92)
0030							
non-VM vs VLM	73	13	64	49	9	48	0·76 (0·37–1·57)
VnLM vs VLM							0·84 (0·41–1·73)
FIRST							
non-VM vs VLM	45	13	44	30	11	37	0·48 (0·24–0·97)
VnLM vs VLM							0·85 (0·43–1·67)
SERD (500)							
non-VM vs VLM	126	61	75	85	60	60	0·38 (0·27–0·53)
VnLM vs VLM							0·52 (0·36–0·75)
CONFIRM							
non-VM vs VLM	72	47	43	59	46	37	0·43 (0·29–0·64)
VnLM vs VLM							0·48 (0·31–0·76)
FIRST							
non-VM vs VLM	54	14	32	26	14	23	0·28 (0·14–0·54)
VnLM vs VLM							0·56 (0·28–1·10)



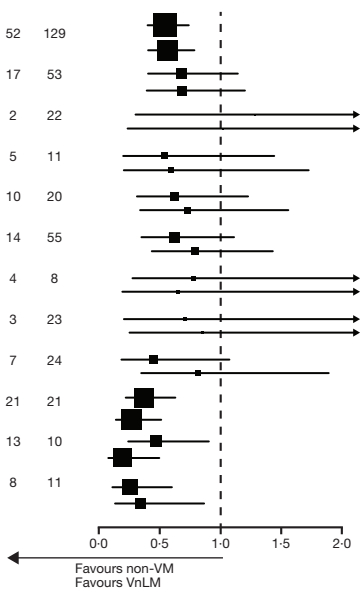
OS (First-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
First-line							
non-VM vs VLM	459	136	288	159	87	134	0·43 (0·33–0·56)
VnLM vs VLM							0·64 (0·49–0·85)
SERM							
non-VM vs VLM	215	49	105	36	18	30	0·41 (0·23–0·72)
VnLM vs VLM							0·63 (0·35–1·14)
0027							
non-VM vs VLM	-	-	-	-	-	-	
VnLM vs VLM							
0030							
non-VM vs VLM	80	26	54	15	12	20	0·28 (0·13–0·61)
VnLM vs VLM							0·54 (0·26–1·12)
0025							
non-VM vs VLM	135	23	51	21	6	10	0·63 (0·25–1·56)
VnLM vs VLM							0·79 (0·29–2·17)
AI							
non-VM vs VLM	118	26	108	47	14	53	0·70 (0·39–1·28)
VnLM vs VLM							1·03 (0·57–1·88)
0027							
non-VM vs VLM	-	-	-	-	-	-	
VnLM vs VLM							
0030							
non-VM vs VLM	73	13	64	21	4	16	0·72 (0·25–2·13)
VnLM vs VLM							0·58 (0·19–1·75)
FIRST							
non-VM vs VLM	45	13	44	26	10	37	0·64 (0·31–1·32)
VnLM vs VLM							1·36 (0·67–2·75)
SERD (500)							
non-VM vs VLM	126	61	75	76	55	51	0·36 (0·25–0·52)
VnLM vs VLM							0·53 (0·36–0·77)
CONFIRM							
non-VM vs VLM	72	47	43	47	42	31	0·38 (0·25–0·58)
VnLM vs VLM							0·47 (0·30–0·76)
FIRST							
non-VM vs VLM	54	14	32	29	13	20	0·33 (0·17–0·65)
VnLM vs VLM							0·64 (0·32–1·29)



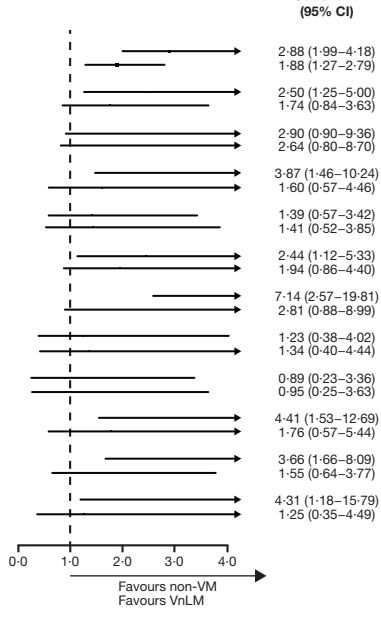
DoCB (First-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
First-line							
non-VM vs VLM	406	68	206	224	52	129	0·55 (0·40–0·74)
VnLM vs VLM							0·57 (0·41–0·79)
SERM							
non-VM vs VLM	176	25	86	97	17	53	0·68 (0·41–1·15)
VnLM vs VLM							0·69 (0·40–1·21)
0027							
non-VM vs VLM	42	5	33	27	2	22	1·29 (0·30–5·46)
VnLM vs VLM							1·02 (0·24–4·39)
0030							
non-VM vs VLM	47	7	20	20	5	11	0·54 (0·20–1·45)
VnLM vs VLM							0·60 (0·21–1·73)
0025							
non-VM vs VLM	87	13	33	50	10	20	0·62 (0·31–1·23)
VnLM vs VLM							0·73 (0·34–1·56)
AI							
non-VM vs VLM	142	22	84	76	14	55	0·63 (0·35–1·12)
VnLM vs VLM							0·79 (0·44–1·43)
0027							
non-VM vs VLM	69	6	15	36	4	8	0·78 (0·28–2·21)
VnLM vs VLM							0·65 (0·19–2·18)
0030							
non-VM vs VLM	43	7	39	22	3	23	0·71 (0·21–2·43)
VnLM vs VLM							0·86 (0·25–2·90)
FIRST							
non-VM vs VLM	30	9	30	18	7	24	0·45 (0·19–1·08)
VnLM vs VLM							0·81 (0·35–1·90)
SERD (500)							
non-VM vs VLM	88	21	36	51	21	21	0·37 (0·22–0·63)
VnLM vs VLM							0·27 (0·14–0·51)
CONFIRM							
non-VM vs VLM	42	13	16	32	13	10	0·47 (0·24–0·91)
VnLM vs VLM							0·20 (0·08–0·50)
FIRST							
non-VM vs VLM	46	8	20	19	8	11	0·26 (0·11–0·60)
VnLM vs VLM							0·34 (0·13–0·87)



CBR (First-line)

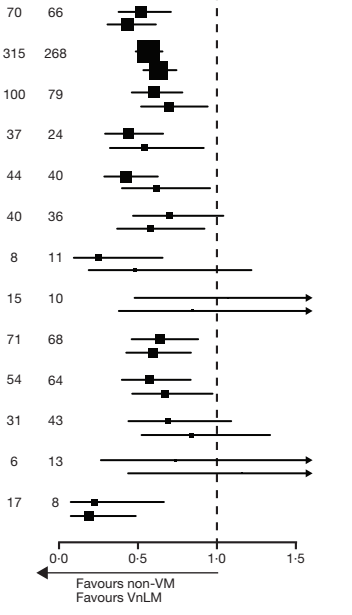
Trial	n non-VM	n VLM	n VnLM	CBR non-VM	CBR VLM	CBR VnLM	Odds ratio (95% CI)
First-line							
non-VM vs VLM	500	166	334	70·6%	39·2%	59·0%	2·88 (1·99–4·18)
VnLM vs VLM							1·88 (1·27–2·79)
SERM							
non-VM vs VLM	242	62	150	65·3%	40·3%	55·3%	2·50 (1·25–5·00)
VnLM vs VLM							1·74 (0·84–3·63)
0027							
non-VM vs VLM	71	15	58	59·2%	33·3%	56·9%	2·90 (0·90–9·36)
VnLM vs VLM							2·64 (0·80–8·70)
0030							
non-VM vs VLM	80	26	54	58·8%	26·9%	37·0%	3·87 (1·46–10·24)
VnLM vs VLM							1·60 (0·57–4·46)
0025							
non-VM vs VLM	135	23	51	64·4%	56·5%	64·7%	1·39 (0·57–3·42)
VnLM vs VLM							1·41 (0·52–3·85)
AI							
non-VM vs VLM	211	50	137	66·8%	44·0%	60·6%	2·44 (1·12–5·33)
VnLM vs VLM							1·94 (0·86–4·40)
0027							
non-VM vs VLM	98	24	31	70·4%	25·0%	48·4%	7·14 (2·57–19·81)
VnLM vs VLM							2·81 (0·88–8·99)
0030							
non-VM vs VLM	73	13	64	58·9%	53·8%	60·9%	1·23 (0·38–4·02)
VnLM vs VLM							1·34 (0·40–4·44)
FIRST							
non-VM vs VLM	45	13	44	66·7%	69·2%	68·2%	0·89 (0·23–3·36)
VnLM vs VLM							0·95 (0·25–3·63)
SERD (500)							
non-VM vs VLM	126	61	75	69·8%	34·4%	48·0%	4·41 (1·53–12·69)
VnLM vs VLM							1·76 (0·57–5·44)
CONFIRM							
non-VM vs VLM	72	47	43	58·3%	27·7%	37·2%	3·66 (1·66–8·09)
VnLM vs VLM							1·55 (0·64–3·77)
FIRST							
non-VM vs VLM	54	14	32	85·2%	57·1%	62·5%	4·31 (1·18–15·79)
VnLM vs VLM							1·25 (0·35–4·49)



b

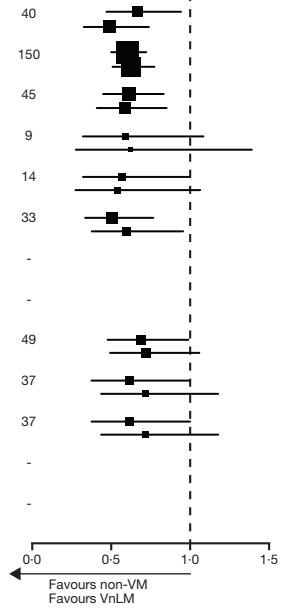
PFS (Second-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
Second-line							
non-VM vs VLM	1053	655	616	890	619	545	0·54 (0·49–0·60)
VnLM vs VLM							0·62 (0·55–0·70)
AI							
non-VM vs VLM	448	258	230	386	250	213	0·52 (0·44–0·61)
VnLM vs VLM							0·59 (0·49–0·71)
0048							
non-VM vs VLM	142	106	88	125	103	85	0·56 (0·43–0·73)
VnLM vs VLM							0·73 (0·54–0·97)
0020							
non-VM vs VLM	109	42	32	88	40	27	0·54 (0·37–0·78)
VnLM vs VLM							0·58 (0·36–0·95)
0021							
non-VM vs VLM	93	38	37	76	37	35	0·41 (0·27–0·61)
VnLM vs VLM							0·65 (0·41–1·04)
SOFEA							
non-VM vs VLM	104	72	73	97	70	66	0·52 (0·38–0·71)
VnLM vs VLM							0·43 (0·31–0·61)
SERD (250)							
non-VM vs VLM	522	333	299	437	315	268	0·56 (0·49–0·65)
VnLM vs VLM							0·63 (0·53–0·74)
0048							
non-VM vs VLM	150	109	86	129	100	79	0·60 (0·46–0·78)
VnLM vs VLM							0·70 (0·52–0·94)
0020							
non-VM vs VLM	93	39	28	71	37	24	0·44 (0·29–0·66)
VnLM vs VLM							0·54 (0·32–0·92)
0021							
non-VM vs VLM	88	44	45	69	44	40	0·42 (0·29–0·63)
VnLM vs VLM							0·62 (0·40–0·96)
CONFIRM							
non-VM vs VLM	71	41	40	66	40	36	0·70 (0·47–1·04)
VnLM vs VLM							0·58 (0·37–0·92)
FINDER1							
non-VM vs VLM	19	9	15	10	8	11	0·25 (0·09–0·66)
VnLM vs VLM							0·48 (0·19–1·22)
FINDER2							
non-VM vs VLM	13	19	14	10	15	10	1·07 (0·48–2·40)
VnLM vs VLM							0·85 (0·38–1·89)
SOFEA							
non-VM vs VLM	88	72	71	82	71	68	0·64 (0·46–0·88)
VnLM vs VLM							0·60 (0·43–0·83)
SERD (500)							
non-VM vs VLM	83	64	87	67	54	64	0·58 (0·40–0·83)
VnLM vs VLM							0·67 (0·46–0·97)
CONFIRM							
non-VM vs VLM	55	36	53	49	31	43	0·69 (0·44–1·09)
VnLM vs VLM							0·84 (0·52–1·33)
FINDER1							
non-VM vs VLM	19	9	17	12	6	13	0·74 (0·27–2·05)
VnLM vs VLM							1·15 (0·44–3·05)
FINDER2							
non-VM vs VLM	9	19	17	6	17	8	0·22 (0·08–0·66)
VnLM vs VLM							0·19 (0·08–0·49)



OS (Second-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
Second-line							
non-VM vs VLM	993	599	553	504	417	291	0·58 (0·51–0·67)
VnLM vs VLM							0·57 (0·49–0·66)
AI							
non-VM vs VLM	448	258	230	213	175	104	0·57 (0·47–0·70)
VnLM vs VLM							0·46 (0·36–0·58)
0048							
non-VM vs VLM	142	106	88	77	75	44	0·59 (0·43–0·81)
VnLM vs VLM							0·48 (0·33–0·69)
0020							
non-VM vs VLM	109	42	32	36	22	7	0·51 (0·30–0·86)
VnLM vs VLM							0·30 (0·13–0·70)
0021							
non-VM vs VLM	93	38	37	24	21	13	0·37 (0·20–0·66)
VnLM vs VLM							0·43 (0·21–0·88)
SOFEA							
non-VM vs VLM	104	72	73	76	57	40	0·67 (0·47–0·94)
VnLM vs VLM							0·49 (0·33–0·74)
SERD (250)							
non-VM vs VLM	490	305	270	251	215	150	0·60 (0·50–0·72)
VnLM vs VLM							0·63 (0·51–0·77)
0048							
non-VM vs VLM	150	109	86	83	79	45	0·61 (0·45–0·83)
VnLM vs VLM							0·59 (0·41–0·85)
0020							
non-VM vs VLM	93	39	28	27	17	9	0·59 (0·32–1·08)
VnLM vs VLM							0·62 (0·28–1·39)
0021							
non-VM vs VLM	88	44	45	28	21	14	0·57 (0·32–1·08)
VnLM vs VLM							0·54 (0·27–1·06)
CONFIRM							
non-VM vs VLM	71	41	40	54	39	33	0·51 (0·33–0·77)
VnLM vs VLM							0·60 (0·38–0·96)
FINDER1							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-
FINDER2							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-
SOFEA							
non-VM vs VLM	88	72	71	59	59	49	0·69 (0·48–0·99)
VnLM vs VLM							0·72 (0·49–1·06)
SERD (500)							
non-VM vs VLM	55	36	53	40	27	37	0·61 (0·38–1·00)
VnLM vs VLM							0·72 (0·44–1·18)
CONFIRM							
non-VM vs VLM	55	36	53	40	27	37	0·61 (0·38–1·00)
VnLM vs VLM							0·72 (0·44–1·18)
FINDER1							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-
FINDER2							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-



DoCB (Second-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
Second-line							
non-VM vs VLM	369	150	253	273	130	201	0·65 (0·53–0·81)
VnLM vs VLM							0·81 (0·65–1·00)
AI							
non-VM vs VLM	150	55	87	111	49	74	0·58 (0·41–0·83)
VnLM vs VLM							0·75 (0·52–1·09)
0048							
non-VM vs VLM	35	21	29	30	18	27	0·88 (0·49–1·58)
VnLM vs VLM							0·95 (0·52–1·72)
0020							
non-VM vs VLM	50	14	17	33	12	12	0·50 (0·25–0·98)
VnLM vs VLM							0·60 (0·26–1·36)
0021							
non-VM vs VLM	34	10	15	24	9	13	0·43 (0·19–0·94)
VnLM vs VLM							0·84 (0·35–2·01)
SOFEA							
non-VM vs VLM	31	10	26	24	10	22	0·45 (0·21–0·95)
VnLM vs VLM							0·54 (0·25–1·17)
SERD (250)							
non-VM vs VLM	178	80	126	130	72	104	0·63 (0·47–0·85)
VnLM vs VLM							0·78 (0·57–1·06)
0048							
non-VM vs VLM	34	20	33	30	18	30	1·02 (0·56–1·83)
VnLM vs VLM							1·07 (0·59–1·93)
0020							
non-VM vs VLM	45	9	14	30	8	11	0·65 (0·29–1·42)
VnLM vs VLM							0·69 (0·28–1·75)
0021							
non-VM vs VLM	41	14	22	24	14	17	0·27 (0·14–0·54)
VnLM vs VLM							0·42 (0·20–0·85)
CONFIRM							
non-VM vs VLM	31	13	20	27	12	16	0·90 (0·45–1·83)
VnLM vs VLM							0·65 (0·30–1·40)
FINDER1							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-
FINDER2							
non-VM vs VLM	3	6	6	1	3	2	0·94 (0·10–9·08)
VnLM vs VLM							1·02 (0·17–6·16)
SOFEA							
non-VM vs VLM	24	18	31	18	17	28	0·41 (0·21–0·82)
VnLM vs VLM							0·88 (0·48–1·62)
SERD (500)							
non-VM vs VLM	41	15	40	32	9	23	0·92 (0·43–1·94)
VnLM vs VLM							0·89 (0·41–1·96)
CONFIRM							
non-VM vs VLM	35	11	28	29	7	19	1·12 (0·49–2·56)
VnLM vs VLM							1·12 (0·47–2·67)
FINDER1							
non-VM vs VLM	-	-	-	-	-	-	-
VnLM vs VLM							-
FINDER2							
non-VM vs VLM	6	4	12	3	2	4	0·15 (0·01–1·60)
VnLM vs VLM							0·17 (0·02–1·33)

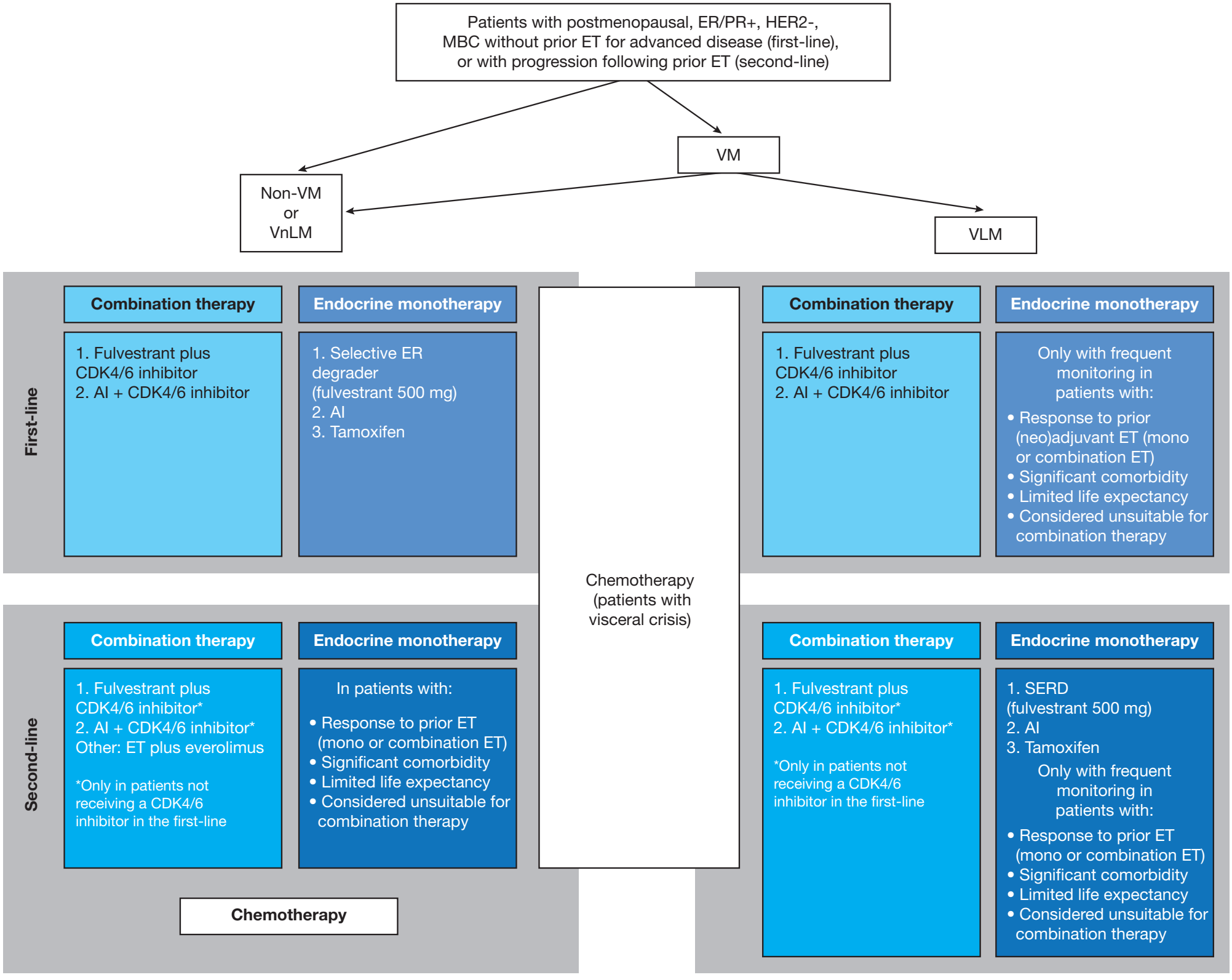
CBR (Second-line)

Trial	n non-VM	n VLM	n VnLM	Events non-VM	Events VLM	Events VnLM	Hazard ratio (95% CI)
Second-line							
non-VM vs VLM	782	564	551	43·4%	26·2%	45·7%	1·95 (1·56–2·45)
VnLM vs VLM							2·40 (1·87–3·09)
AI							
non-VM vs VLM	395	241	220	36·5%	22·0%	38·6%	1·86 (1·23–2·80)
VnLM vs VLM							2·25 (1·42–3·56)
0048							
non-VM vs VLM	142	106	88	24·6%	19·8%	33·0%	1·32 (0·72–2·44)
VnLM vs VLM							1·99 (1·04–3·82)
0020							
non-VM vs VLM	109	42	32	45·9%	33·3%	53·1%	1·69 (0·81–3·57)
VnLM vs VLM							2·27 (0·88–5·83)
0021							
non-VM vs VLM	93	38	37	36·6%	26·3%	40·5%	1·61 (0·70–3·72)
VnLM vs VLM							1·91 (0·72–5·06)
SOFEA							
non-VM vs VLM	104	72	73	29·8%	13·9%	35·6%	2·66 (1·21–5·87)
VnLM vs VLM							3·52 (1·54–8·04)
SERD (250)							
non-VM vs VLM	449	306	287	39·0%	25·8%	44·3%	1·80 (1·29–2·50)
VnLM vs VLM							2·43 (1·69–3·49)
0048							
non-VM vs VLM	150	109	86	22·7%	18·3%	38·4%	1·30 (0·70–2·42)
VnLM vs VLM							2·77 (1·44–5·31)
0020							
non-VM vs VLM	93	39	28	48·4%	23·1%	50·0%	3·12 (1·34–7·30)
VnLM vs VLM							3·33 (1·17–9·53)
0021							
non-VM vs VLM	88	44	45	46·6%	31·8%	48·9%	1·87 (0·87–4·00)
VnLM vs VLM							2·05 (0·87–4·86)
CONFIRM							
non-VM vs VLM	71	41	40	43·7%	31·7%	50·0%	1·67 (0·74–3·74)
VnLM vs VLM							2·15 (0·87–5·32)
FINDER1							
non-VM vs VLM	-	19	9	15	68·4%	11·1%	33·3%	17·33 (1·75–171·66)
VnLM vs VLM							4·00 (0·39–41·51)
FINDER2							
non-VM vs VLM	13	19	14	23·1%	31·6%	42·9%	0·65 (0·13–3·26)
VnLM vs VLM							1·63 (0·39–6·82)
SOFEA							
non-VM vs VLM	88	72	71	27·3%	25·0%	43·7%	1·10 (0·54–2·24)
VnLM vs VLM							2·36 (1·15–4·82)
SERD (500)							
non-VM vs VLM	83	64	87	60·2%	29·7%	55·2%	3·59 (1·51–8·53)
VnLM vs VLM							2·91 (1·24–6·84)
CONFIRM							
non-VM vs VLM	55	36	53	63·6%	30·6%	52·8%	3·98 (1·62–9·75)
VnLM vs VLM							2·54 (1·04–6·20)
FINDER1							
non-VM vs VLM	-	19	9	17	47·4%	44·4%	47·1%	1·12 (0·23–5·53)
VnLM vs VLM							1·11 (0·22–5·63)
FINDER2							
non-VM vs VLM	9	19	17	66·7%	21·1%	70·6%	7·50 (1·28–44·08)
VnLM vs VLM							9·00 (1·97–41·07)

Supplementary Figure 3: Clinical outcomes for non-VM and VnLM versus VLM by endocrine agent

a Forest plots of PFS, OS, DoCB and CBR in the first-line setting. **b** Forest plots of PFS, OS, DoCB and CBR in the second-line setting.

AI, aromatase inhibitor; CBR, clinical benefit rate; DoCB, duration of clinical benefit; HR, hazard ratio; n, number of patients; non-VM, non-visceral metastases; PFS, progression-free survival; OR, odds ratio; OS, overall survival; SERD, selective estrogen receptor degrader; SERM, selective estrogen receptor modulator; VLM, visceral liver metastases; VM, visceral metastases; VnLM, visceral non-liver metastases.


Patients with postmenopausal, ER/PR+, HER2-,
MBC without prior ET for advanced disease (first-line),
or with progression following prior ET (second-line)
VM
Non-VM
or
VnLM
VLM
First-line
Combination therapy
1. Fulvestrant plus CDK4/6 inhibitor
2. AI + CDK4/6 inhibitor
Endocrine monotherapy
1. Selective ER degrader (fulvestrant 500 mg)
2. AI
3. Tamoxifen
Combination therapy
1. Fulvestrant plus CDK4/6 inhibitor
2. AI + CDK4/6 inhibitor
Endocrine monotherapy
Only with frequent monitoring in patients with:
• Response to prior (neo)adjuvant ET (mono or combination ET)
• Significant comorbidity
• Limited life expectancy
• Considered unsuitable for combination therapy
Chemotherapy (patients with visceral crisis)
Second-line
Combination therapy
1. Fulvestrant plus CDK4/6 inhibitor*
2. AI + CDK4/6 inhibitor*
Other: ET plus everolimus
*Only in patients not receiving a CDK4/6 inhibitor in the first-line
Endocrine monotherapy
In patients with:
• Response to prior ET (mono or combination ET)
• Significant comorbidity
• Limited life expectancy
• Considered unsuitable for combination therapy
Chemotherapy
Combination therapy
1. Fulvestrant plus CDK4/6 inhibitor*
2. AI + CDK4/6 inhibitor*
*Only in patients not receiving a CDK4/6 inhibitor in the first-line
Endocrine monotherapy
1. SERD (fulvestrant 500 mg)
2. AI
3. Tamoxifen
Only with frequent monitoring in patients with:
• Response to prior ET (mono or combination ET)
• Significant comorbidity
• Limited life expectancy
• Considered unsuitable for combination therapy

Supplementary Figure 4: Potential first- and second-line treatment options in patients with HR+ ABC with or without VM

ABC, advanced breast cancer; AI, aromatase inhibitor; CDK, cyclin-dependent kinase; ER+, estrogen receptor-positive; ET, endocrine therapy; HER2-, human epidermal growth factor 2-negative; HR+, hormone receptor-positive; PR+, progesterone receptor-positive; SERD, selective estrogen receptor degrader; VLM, visceral liver metastases; VM, visceral metastases; VnLM, visceral non-liver metastases.

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