

SUPPLEMENTARY MATERIAL

OBSTRUCTIVE SLEEP APNOEA TREATMENT AND BLOOD PRESSURE: WHICH PHENOTYPES PREDICT A RESPONSE? A SYSTEMATIC REVIEW AND META-ANALYSIS

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Literature search

The keywords and/or corresponding MeSH terms to carry out the search were: ("obstructive sleep apn*" OR "sleep apn* syndrome" OR "polysomnography" OR "OSA" OR "OSAS" OR "SAHS" OR "sleep apn*/hypopnea/hypoventilation") AND ("continuous positive air*" OR "continuous positive air* pressure" OR cPAP OR "positive pressure respiration" OR "oral appliance" OR "mandibular

advancement" OR "dental appliance" OR "mandibular device" OR "dental device" OR "oral device") AND ("randomised controlled trial"). We included original, peer-reviewed RCTs if published as full text or even abstract (if sufficient data were present) and did not include any language or gender restriction.

Besides, a search of the online databases of general medical, respiratory, and sleep journals as indexed by ISI Web of Science was performed looking for advance online publications. We hand-searched the contents pages of the last 10 issues of these journals, the online first articles and the bibliographies of relevant articles to retrieve further potential publications. We fixed January the 9th, 2019 as the cut-off date for the inclusion of new studies, thereby avoiding subjectivities in the choice of the time point when new information is reviewed and allowing calendar year-based assessments.

Data collection process and extracted items

The Cochrane Consumers and Communication Review extraction template was adopted for standardisation of data extraction. Data were extracted independently by two investigators (AG and MP). Inconsistencies were resolved by discussion with CF and DS, and a final consensus was reached. For each included study, we extracted study identifiers (the first author's name, year of publication), design (type of study, crossover or parallel design), characteristics of the study participants (age, gender, BMI [body mass index]), including diagnosis and procedural characteristics at study entry), weeks of treatment, the presence of comorbidities (in particular chronic heart failure), mean compliance with CPAP (hours per night), percentage of hypertensive participants, percentage of participants treated with antihypertensive medications, the grade of sleepiness (measured by the Epworth Sleepiness Scale [ESS]), the numbers of apnoea/hypopnoea per hour of sleep (AHI), characteristics of the study intervention, the type of control arm, methods to measure BP (office or ambulatory blood pressure monitoring [ABPM] or beat-to-beat blood pressure monitoring) SBP and DBP mean values at baseline, mean SBP and DBP at end treatment. When only mean arterial pressure (MAP) was reported, not to exclude important information, we estimated systolic and diastolic BP according to the formula $MAP = 1/3(SBP - DBP) + DBP$ and considering SBP as 1,65-times diastolic BP and SD of MAP as 1,2-times that of diastolic BP and 0,6-times that of systolic BP. The coefficients of these estimates were based on the data calculated from all the included studies that reported sufficient information.

Table E1. Chronological summary of literature on the effect of OSA treatment on blood pressure, and the main trial characteristics (references [16–76] in main article References list).

Author and publication year	Study type	Strata	Comparator	Follow-up (weeks)	Sample size Total (CPAP/Control)	Age Mean	Male gender (%)	BMI Mean	Compliance Mean	AHI Mean	ESS score Mean	Quality score (Jadad score)
Engleman HM et al 1996	Crossover		Placebo	3	13 (13/13)	51.00	84.60	36.00	4.30	49.00	NA	6 (1)
Barbé F et al 2001	Parallel		Sham CPAP	6	54 (29/25)	52.90	90.70	29.00	4.50	55.40	7.00	9 (4)
Faccenda JF et al 2001	Crossover		Placebo	4	68 (68/68)	50.00	80.90	30.00	3.30	35.00	15.00	7 (2)
Monasterio C et al 2001	Parallel		Conservative	26	125 (66/59)	53.50	85.70	29.40	4.80	20.50	12.60	6 (3)
Barnes M et al 2002	Crossover		Placebo	8	28 (28/28)	45.50	85.70	30.20	3.53	12.90	11.30	5 (2)
Pepperell JC et al 2002	Parallel		Sham CPAP	4	118 (59/59)	50.50	100.00	33.50	4.70	NA	16.20	10 (4)
Becker HF et al 2003	Parallel		Sham CPAP	9	32 (16/16)	53.40	90.60	33.40	5.50	63.80	14.30	8 (2)
Barnes M et al 2004	Crossover		Placebo	13	80 (80/80)	46.40	78.80	31.00	3.60	21.50	10.20	6 (2)
Ip MSM et al 2004	Parallel		Control	4	27 (14/13)	42.70	100.00	29.40	4.20	46.40	11.10	6 (2)
Mansfield DR et al 2004	Parallel		Control	12	40 (21/19)	57.30	94.50	34.00	5.60	28.20	10.00	6 (2)
Arias MA et al 2005	Crossover		Sham CPAP	13	25 (25/25)	52.00	100.00	30.50	6.00	44.00	12.60	8 (3)

Author and publication year	Study type	Strata	Comparator	Follow-up (weeks)	Sample size Total (CPAP/Control)	Age Mean	Male gender (%)	BMI Mean	Compliance Mean	AHI Mean	ESS score Mean	Quality score (Jadad score)
Campos-Rodriguez F et al 2006	Parallel		Sham CPAP	4	68 (34/34)	56.70	60.30	34.80	4.70	58.90	14.30	10 (4)
Hui DS et al 2006	Parallel		Sham CPAP	12	46 (23/23)	50.80	80.40	27.20	3.90	31.20	10.70	9 (4)
Mills PJ et al 2006	Parallel		Sham CPAP	2	33 (17/16)	48.30	84.80	31.90	6.40	63.20	12.00	7 (3)
Robinson GV et al 2006	Parallel		Sham CPAP	4	32 (16/16)	54.00	88.60	33.20	4.80	NA	5.30	9 (4)
Coughlin SR et al 2007	Crossover		Sham CPAP	6	34 (34/34)	49.00	100.00	36.10	3.30	NA	13.80	8 (4)
Drager LF et al 2007	Parallel		No treatment	17	24 (12/12)	45.50	100.00	29.80	6.00	59.00	13.50	8 (3)
Lam B et al 2007	Parallel		Control	10	67 (34/33)	46.00	79.10	27.50	4.20	21.40	12.00	7 (3)
Noda A et al 2007	Parallel		No CPAP	13	33 (14/19)	53.20	100.00	NA	NA	47.00	NA	1 (1)
Cross MD et al 2008	Crossover		Sham CPAP	6	27 (27/27)	48.00	96.30	37.00	3.80	63.00	13.65	6 (4)
Egea CJ et al 2008	Parallel		Sham CPAP	13	60 (28/30)	63.50	93.30	31.10	NA	41.90	7.60	4 (2)
Ruttanaumpawan P et al 2008	Parallel		Control	4	33 (19/14)	59.60	90.90	31.20	6.20	42.60	NA	5 (2)
Comondore VR et al 2009	Crossover		No therapy	4	13 (13/13)	55.50	69.20	31.10	5.50	27.90	6.80	5 (1)
Barbé F et al 2010	Parallel		No CPAP	52	359 (178/181)	55.50	83.30	32.50	4.70	46.00	6.40	7 (3)

Author and publication year	Study type	Strata	Comparator	Follow-up (weeks)	Sample size Total (CPAP/Control)	Age Mean	Male gender (%)	BMI Mean	Compliance Mean	AHI Mean	ESS score Mean	Quality score (Jadad score)
Durán-Cantolla J et al 2010	Parallel		Sham CPAP	12	272 (169/172)	52.40	81.50	31.90	4.30	43.50	10.00	11 (5)
Lozano L et al 2010	Parallel		Conventional treatment	13	64 (29/35)	59.20	68.80	30.80	5.60	52.70	6.14	8 (2)
Nguyen PK et al 2010	Parallel		Sham CPAP	13	20 (10/10)	53.40	90.00	29.80	5.00	35.20	13.65	7 (4)
Drager LF et al 2011	Parallel		No treatment	13	36 (18/18)	43.00	100.00	28.80	5.20	56.50	12.00	9 (3)
Takaesu et al 2011	Crossover		Sham CPAP	4	12 (12/12)	41.30	91.70	26.20	4.85	40.70	.	6 (3)
Craig SE et al 2012	Parallel		No CPAP	24	391 (154/156)	57.70	78.00	32.30	2.27	.	7.95	5 (2)
Hoyos CM et al 2012	Parallel		Sham CPAP	12	65 (34/31)	49.00	100.00	31.30	3.20	39.90	10.10	7 (5)
Weaver TE et al 2012	Parallel		Sham CPAP	8	239 (121/118)	50.60	58.54	33.70	5.00	12.65	14.94	8 (4)
Jones A et al 2013	Crossover		Sham CPAP	12	43 (43/43)	46.00	65.00	29.90	3.00	31.00	13.00	8 (5)
Litvin AY et al 2013	Crossover		Placebo	3	44 (44/44)	55.50	77.00	37.70	5.10	63.40	.	6 (2)
Martinez-Garcia MA 2013	Parallel		Control	12	194 (98/96)	58.00	68.60	34.10	5.00	40.40	9.10	9 (3)
Pedrosa RP et al 2013	Parallel		Control	24	35 (19/16)	56.00	77.00	32.00	6.01	29.00	10.00	8 (2)
Chirinos JA et al 2014	Parallel		Weight loss	24	119 (58/61)	49.00	57.40	38.75	4.00	42.70	9.32	4 (2)

Author and publication year	Study type	Strata	Comparator	Follow-up (weeks)	Sample size Total (CPAP/Control)	Age Mean	Male gender (%)	BMI Mean	Compliance Mean	AHI Mean	ESS score Mean	Quality score (Jadad score)
Dal-Fabbro C et al 2014	Crossover		Placebo	4	29 (29/29)	47.00	NA	28.40	5.90	42.30	11.30	7 (2)
De Oliveira AC et al 2014	Parallel		Sham CPAP	8	47 (24/23)	59.40	57.00	29.80	NA	20.00	10.00	7 (3)
Gottlieb DJ et al 2014	Parallel		HLSE	12	187 (90/97)	63.20	72.40	33.84	3.50	24.70	8.80	7 (3)
Hall AB et al 2014	Parallel		No CPAP	7	45 (22/23)	61.40	75.50	NA	4.22	27.20	10.13	6 (3)
Liu X et al 2014	Parallel		No CPAP	12	80 (40/40)	63.00	72.50	25.25	NA	30.60	NA	5 (2)
Lloberes P et al 2014	Parallel	TRH	Conservative treatment	12	56 (27/29)	58.70	72.40	32.00	5.70	50.00	7.30	8 (3)
		WCRH	Conservative treatment	12	22 (9/13)	58.80	70.80	29.70	5.30	52.80	5.50	
McMillan A et al 2014	Parallel		Conservative treatment	48	278 (113/116)	71.10	82.50	33.75	2.22	28.70	11.60	5 (3)
Hoyos CM et al 2015	Parallel		Sham CPAP	8	30 (14/17)	49.10	86.00	31.40	4.30	40.00	10.50	10 (5)
Huang Z et al 2015	Parallel		Control	148	73 (36/37)	62.30	82.20	27.70	4.50	28.50	8.80	7 (3)
Martinez-Garcia MA et al 2015	Parallel		Control	12	224 (115/109)	75.50	68.30	32.90	4.90	50.40	9.50	5 (2)
Muxfeldt ES et al 2015	Parallel		Control	24	117 (46/60)	60.50	39.80	33.40	4.80	41.00	11.00	9 (3)
Pamidi S et al 2015	Parallel		Placebo	2	38 (26/12)	54.30	67.00	35.40	8.00	35.80	10.30	8 (3)

Author and publication year	Study type	Strata	Comparator	Follow-up (weeks)	Sample size Total (CPAP/Control)	Age Mean	Male gender (%)	BMI Mean	Compliance Mean	AHI Mean	ESS score Mean	Quality score (Jadad score)
Thunström E et al 2015	Parallel		No treatment	24	47 (24/23)	58.70	68.10	27.70	5.00	23.30	9.68	8 (2)
McEvoy et al 2016	Parallel		No CPAP	NA	2717 (1166/1158)	61.30	80.90	28.70	5.20	29.30	7.40	6 (3)
Paz y Mar H et al 2016	Parallel		Sham CPAP	8	149 (72/71)	51.00	53.70	37.30	3.50	19.30	10.00	8 (5)
Salord N et al 2016	Parallel		Conservative treatment	12	80 (42/38)	46.60	27.50	47.50	5.40	60.50	7.80	7 (3)
Shaw JE et al 2016	Parallel		Conservative treatment	24	298 (119/137)	62.30	64.50	49.30	4.90	27.10	9.50	6 (3)
Campos-Rodriguez F et al 2017	Parallel		Conservative treatment	12	307 (151/156)	57.10	0.00	33.70	4.00	32.00	9.80	6 (3)
Casitas R et al 2017	Crossover	INH	Sham CPAP	12	16 (15/16)	58.00	81.00	30.00	5.30	44.00	8.20	10 (5)
		DNSH			16 (15/16)	54.00	81.00	28.30	NA	37.90	91.00	
Lam JCM et al 2017	Parallel		No treatment	12	64 (32/32)	55.00	26.00	29.90	2.50	45.30	7.50	5 (3)
Gupta A et al 2018	Parallel		Control	52	70 (30/40)	53.03	81.43	25.26	4.20	32.20	6.00	6 (3)
Joyeux-Faure M et al 2018	Parallel		Sham CPAP	12	37 (19/18)	60.00	86.50	28.60	2.88	37.60	8.20	6 (3)
Shim CY et al 2018	Parallel		Pharmacological treatment	12	52 (26/26)	49.30	93.00	27.00	4.90	57.70	NA	9 (5)
Zou B et al 2018	Parallel		Control	12	90 (43/47)	59.90	63.33	31.80	4.70	43.18	9.90	6 (2)

Table E2. Chronological summary of literature on the effect of OSA treatment on systolic blood pressure (references [16–76] in main article References list).

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Engleman HM et al 1996	Crossover		Daytime	NA	138.00	NA	139.00	-1.00 (4.49)
Barbé F et al 2001	Parallel		24-h	126.00	124.00	123.00	122.00	-1.00 (2.82)
Faccenda JF et al 2001	Crossover		24-h	NA	126.90	NA	128.20	-1.30 (1.02)
Monasterio C et al 2001	Parallel		Office	126.00	122.00	132.00	130.00	-2.00 (2.94)
Barnes M et al 2002	Crossover		24-h	130.50	129.80	130.50	129.30	0.50 (1.95)
Pepperell JC et al 2002	Parallel		24-h	132.50	130.20	134.90	135.90	-3.40 (1.45)
Becker HF et al 2003	Parallel		Mean 20-h Portapres	135.90	126.40	136.20	137.30	-10.60 (5.23)
Barnes M et al 2004	Crossover		24-h	126.00	127.30	126.00	128.20	-1.40 (1.26)
Ip MSM et al 2004	Parallel		Office	122.10	120.20	123.00	120.80	0.30 (4.27)
Mansfield DR et al 2004	Parallel		Office	135.00	136.00	143.00	135.00	9.00 (5.98)
Arias MA et al 2005	Crossover		Daytime	127.00	127.00	127.00	127.00	0.00 (2.32)
Campos-Rodriguez F et al 2006	Parallel		24-h	132.90	131.30	130.40	129.80	-0.90 (2.50)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Hui DS et al 2006	Parallel		24-h	125.90	123.50	122.00	120.20	-0.40 (5.23)
Mills PJ et al 2006	Parallel		Office	155.20	145.10	149.00	146.90	-8.00 (6.60)
Robinson GV et al 2006	Parallel		24-h	140.30	137.00	143.00	139.30	-0.10 (2.65)
Coughlin SR et al 2007	Crossover		Office	NA	135.70	NA	142.40	-6.70 (1.73)
Drager LF et al 2007	Parallel		Daytime	122.00	119.00	124.00	122.00	-1.00 (3.36)
Lam B et al 2007	Parallel		Office	127.90	123.00	125.50	126.70	-6.10 (3.88)
Noda A et al 2007	Parallel		Office	145.00	128.00	144.00	141.00	-14.00 (3.68)
Cross MD et al 2008	Crossover		Office	143.20	141.00	143.20	144.80	-3.80 (3.81)
Egea CJ et al 2008	Parallel		Office	123.00	123.00	124.20	120.50	3.70 (4.26)
Ruttanaumpawan P et al 2008	Parallel		Day Finepres	122.00	113.00	131.00	136.00	-14.00 (6.90)
Comondore VR et al 2009	Crossover		24-h	139.30	131.90	137.40	133.60	-3.60 (7.58)
Barbé F et al 2010	Parallel		Office	141.00	134.66	141.00	136.80	-2.21 (1.44)
Durán-Cantolla J et al 2010	Parallel		24-h	131.00	128.00	129.00	128.00	-2.10 (0.84)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Lozano L et al 2010	Parallel		24-h	130.50	129.20	129.40	131.10	-3.00 (3.54)
Nguyen PK et al 2010	Parallel		Office	121.00	126.00	127.00	130.40	1.60 (5.45)
Drager LF et al 2011	Parallel		24-h	122.00	117.00	121.00	125.00	-9.00 (2.53)
Takaesu et al 2011	Crossover		Office	141.70	135.00	141.70	143.10	-8.10 (5.59)
Craig SE et al 2012	Parallel		Office	129.70	131.10	130.10	129.80	1.80 (0.89)
Hoyos CM et al 2012	Parallel		Office	NA	NA	NA	NA	-4.25 (2.73)
Weaver TE et al 2012	Parallel		48-h Daytime	124.50	125.22	124.40	126.44	-1.32 (1.61)
Jones A et al 2013	Crossover		Office	128.00	126.00	128.00	129.00	-3.00 (2.25)
Litvin AY et al 2013	Crossover		Office	141.00	135.00	141.00	140.00	-5.00 (1.77)
Martinez-Garcia MA 2013	Parallel		24-h	144.90	140.20	143.50	142.30	-4.20 (1.94)
Pedrosa RP et al 2013	Parallel		24-h	NA	NA	NA	NA	-7.80 (4.24)
Chirinos JA et al 2014	Parallel		Office	129.90	125.70	126.50	121.40	0.90 (2.60)
Dal-Fabbro C et al 2014	Crossover		24-h	128.60	129.10	128.60	130.30	-1.20 (2.82)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
De Oliveira AC et al 2014	Parallel		24-h	150.00	NA	146.00	.	-9.30 (4.46)
Gottlieb DJ et al 2014	Parallel		24-h	124.70	123.40	123.60	124.70	-2.40 (1.87)
Hall AB et al 2014	Parallel		Office	115.90	116.50	119.90	113.90	6.60 (5.32)
Liu X et al 2014	Parallel		Daytime	128.50	NA	127.80	127.50	-0.70 (0.10)
Lloberes P et al 2014	Parallel	True resistant hypertension	24-h	140.10	137.80	139.60	141.90	-4.65 (3.03)
		White coat resistant hypertension	24-h	133.10	135.60	132.30	136.50	-1.60 (5.82)
McMillan A et al 2014	Parallel		Office	138.00	137.50	141.70	135.50	5.70 (2.14)
Hoyos CM et al 2015	Parallel		Office	NA	NA	NA	NA	-4.10 (1.38)
Huang Z et al 2015	Parallel		Office	148.00	139.00	146.00	143.00	-5.00 (2.08)
Martinez-Garcia MA et al 2015	Parallel		Office	NA	NA	NA	NA	-0.90 (1.10)
Muxfeldt ES et al 2015	Parallel		24-h	126.70	127.50	130.50	130.10	-0.50 (2.35)
Pamidi S et al 2015	Parallel		24-h	135.20	133.30	130.80	138.40	-9.50 (3.62)
Thunström E et al 2015	Parallel		24-h	136.50	131.70	135.50	135.00	-4.40 (8.38)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
McEvoy et al 2016	Parallel		Office	132.00	132.00	131.00	132.00	-0.40 (0.59)
Paz y Mar H et al 2016	Parallel		Office	126.90	123.46	125.70	125.87	-3.61 (1.88)
Salord N et al 2016	Parallel		Office	136.00	135.00	145.00	140.00	-4.27 (3.55)
Shaw JE et al 2016	Parallel		Office	132.40	129.10	130.60	129.70	-1.80 (1.66)
Campos-Rodriguez F et al 2017	Parallel		Office	131.83	126.11	129.85	126.12	-1.54 (1.55)
Casitas R et al 2017	Crossover	Isolated nocturnal hypertension	Daytime	129.00	128.70	129.00	127.90	0.80 (1.78)
		Day-night sustained hypertension	Daytime	14.00	10.40	141.00	141.80	-4.40 (2.49)
Lam JCM et al 2017	Parallel		Office	145.00	133.00	140.00	136.00	-8.00 (4.34)
Gupta A et al 2018	Parallel		Office	126.54	128.13	125.78	125.63	1.74 (1.98)
Joyeux-Faure M et al 2018	Parallel		24-h	NA	NA	NA	NA	-1.88 (3.08)
Shim CY et al 2018	Parallel		24-h	130.10	125.40	126.90	123.40	-1.20 (4.81)
Zou B et al 2018	Parallel		24-h	148.90	146.60	145.20	148.00	-5.10 (1.95)

NA= Not available; Δ = difference between SBP end treatment and baseline in CPAP group and between SBP end treatment and baseline in control group

Table E3. Chronological summary of literature on the effect of OSA treatment on diastolic blood pressure (references [16–76] in main article References list).

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Engleman HM et al 1996	Crossover		Daytime	NA	84.00	NA	86.00	-2.00 (3.79)
Barbé F et al 2001	Parallel		24-h	79.00	79.00	77.00	77.00	-1.00 (1.41)
Faccenda JF et al 2001	Crossover		24-h	NA	77.80	NA	79.20	-1.50 (0.74)
Monasterio C et al 2001	Parallel		Office	81.00	80.00	84.00	84.00	-1.00 (1.78)
Barnes M et al 2002	Crossover		24-h	81.60	79.50	81.60	80.40	-0.90 (4.82)
Pepperell JC et al 2002	Parallel		24-h	85.10	82.70	85.10	85.90	-3.30 (1.05)
Becker HF et al 2003	Parallel		Mean 20-h Portapres	83.40	73.10	81.10	82.10	-11.30 (3.90)
Barnes M et al 2004	Crossover		24-h	76.30	76.70	76.30	77.30	-0.60 (0.88)
Ip MSM et al 2004	Parallel		Office	77.90	69.20	73.10	73.30	-8.90 (4.67)
Mansfield DR et al 2004	Parallel		Office	82.00	83.00	87.00	82.00	6.00 (2.95)
Arias MA et al 2005	Crossover		Daytime	79.00	78.00	79.00	78.00	0.00 (1.20)
Campos-Rodriguez F et al 2006	Parallel		24-h	78.40	76.90	77.60	76.80	-0.70 (1.45)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Hui DS et al 2006	Parallel		24-h	82.50	80.10	79.60	80.70	-3.50 (1.56)
Mills PJ et al 2006	Parallel		Office	84.20	79.50	83.60	82.90	-4.00 (3.92)
Robinson GV et al 2006	Parallel		24-h	85.30	84.20	86.70	86.80	-1.47 (2.68)
Coughlin SR et al 2007	Crossover		Office	NA	86.80	NA	91.70	-4.90 (1.58)
Drager LF et al 2007	Parallel		Daytime	79.00	75.00	78.00	75.00	-1.00 (2.64)
Lam B et al 2007	Parallel		Office	77.00	71.80	74.20	71.00	-2.00 (2.69)
Noda A et al 2007	Parallel		Office	90.00	83.00	89.00	88.00	-6.00 (3.43)
Cross MD et al 2008	Crossover		Office	80.40	82.30	80.40	82.30	0.00 (2.18)
Egea CJ et al 2008	Parallel		Office	76.30	75.30	74.80	75.20	-1.40 (3.23)
Ruttanaumpawan P et al 2008	Parallel		Day Finepres	67.00	61.00	64.00	63.00	-5.00 (3.86)
Comondore VR et al 2009	Crossover		24-h	82.70	79.00	84.80	81.80	-0.70 (3.99)
Barbé F et al 2010	Parallel		Office	85.00	80.88	86.00	83.78	-2.89 (0.93)
Durán-Cantolla J et al 2010	Parallel		24-h	83.00	81.00	82.00	82.00	-1.30 (0.54)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Lozano L et al 2010	Parallel		24-h	76.70	74.70	75.40	76.30	-2.90 (1.79)
Nguyen PK et al 2010	Parallel		Office	75.20	83.90	78.90	78.70	8.90 (4.43)
Drager LF et al 2011	Parallel		24-h	79.00	74.00	78.00	80.00	-7.00 (2.07)
Takaesu et al 2011	Crossover		Office	84.90	79.60	84.90	85.50	-5.90 (4.05)
Craig SE et al 2012	Parallel		Office	81.20	80.80	81.40	81.30	-0.40 (0.46)
Hoyos CM et al 2012	Parallel		Office	NA	NA	NA	NA	0.45 (1.95)
Weaver TE et al 2012	Parallel		48-h Daytime	76.20	75.63	74.80	76.16	-1.93 (0.97)
Jones A et al 2013	Crossover		Office	76.00	77.00	76.00	77.00	0.00 (1.48)
Litvin AY et al 2013	Crossover		Office	85.00	80.00	85.00	86.00	-6.00 (1.41)
Martinez-Garcia MA 2013	Parallel		24-h	83.40	79.50	82.60	82.10	-3.80 (1.20)
Pedrosa RP et al 2013	Parallel		24-h	NA	NA	NA	NA	-5.50 (2.83)
Dal-Fabbro C et al 2014	Crossover		24-h	80.60	79.50	80.60	80.30	-0.80 (2.09)
De Oliveira AC et al 2014	Parallel		24-h	88.00	NA	88.00	NA	-4.40 (2.50)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Gottlieb DJ et al 2014	Parallel		24-h	72.00	69.80	69.90	70.90	-3.20 (1.12)
Liu X et al 2014	Parallel		Daytime	83.50	81.00	82.90	82.30	-1.90 (0.24)
Lloberes P et al 2014	Parallel	True resistant hypertension	24-h	80.80	76.40	81.40	81.60	-4.65 (1.70)
		White coat resistant hypertension	24-h	77.60	75.60	77.20	78.10	-2.90 (3.06)
McMillan A et al 2014	Parallel		Office	77.80	76.20	78.50	76.20	0.70 (1.35)
Hoyos CM et al 2015	Parallel		Office	NA	NA	NA	NA	-3.80 (1.15)
Huang Z et al 2015	Parallel		Office	83.00	79.00	83.00	81.00	-1.00 (2.58)
Martinez-Garcia MA et al 2015	Parallel		Office	NA	NA	NA	NA	0.30 (0.52)
Muxfeldt ES et al 2015	Parallel		24-h	74.70	74.50	75.70	75.20	-0.20 (1.51)
Pamidi S et al 2015	Parallel		24-h	79.30	76.70	75.60	80.10	-7.10 (1.96)
Thunström E et al 2015	Parallel		24-h	83.60	81.00	84.80	84.00	-1.90 (3.24)
McEvoy et al 2016	Parallel		Office	80.00	79.00	79.00	79.00	-0.70 (0.36)
Paz y Mar H et al 2016	Parallel		Office	79.60	78.23	76.30	76.41	-1.48 (1.32)

Author and publication year	Study type	Strata	Type measure	CPAP arm		Control arm		Δ Mean (SE)
				Baseline Mean	End-treatment Mean	Baseline Mean	End-treatment Mean	
Salord N et al 2016	Parallel		Office	85.00	87.00	90.00	90.00	-2.01 (2.84)
Shaw JE et al 2016	Parallel		Office	76.70	73.60	77.30	75.70	-1.90 (1.10)
Campos-Rodriguez F et al 2017	Parallel		Office	79.95	75.44	80.42	77.88	-2.04 (1.01)
Casitas R et al 2017	Crossover	Isolated nocturnal hypertension	Daytime	76.00	76.10	76.00	77.00	-0.90 (1.68)
		Day-night sustained hypertension	Daytime	88.00	84.90	88.00	87.90	-3.00 (1.68)
Lam JCM et al 2017	Parallel		Office	88.00	77.00	82.00	80.00	-6.00 (2.55)
Gupta A et al 2018	Parallel		Office	87.63	86.23	85.43	84.12	-0.09 (1.52)
Joyeux-Faure M et al 2018	Parallel		24-h	NA	NA	NA	NA	-1.69 (2.28)
Shim CY et al 2018	Parallel		24-h	83.70	78.80	82.90	78.60	-0.60 (3.19)
Zou B et al 2018	Parallel		24-h	84.90	82.80	86.30	87.40	-3.20 (1.48)

NA= Not available; Δ = difference between SBP end treatment and baseline in CPAP group and between SBP end treatment and baseline in control group

Table E4. Stratified analysis for RCT quality.

SBP	N	MD	SE	Inf	Sup	I²	P-value
Low (0-5)	11	-0.489	0.99	-2.429	1.452	74%	0.16
Medium (6-8)	39	-2.483	0.444	-3.353	-1.613	28%	
High (≥ 9)	13	-2.576	0.637	-3.824	-1.328	24%	
DBP	N	MD	SE	Inf	Sup	I²	P-value
Low (0-5)	10	-1.069	0.603	-2.25	0.112	68%	0.24
Medium (6-8)	38	-2.049	0.358	-2.75	-1.348	48%	
High (≥ 9)	13	-2.334	0.472	-3.26	-1.409	35%	

Supplementary bibliography

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