

Supplementary file

Myocardial mechanics in hypertensive disorders of pregnancy: A systematic review and meta-analysis.

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Running Title: Myocardial mechanics in HDP

Key Words: Cardiac mechanics, Hypertension, Pregnancy, Preeclampsia, Hypertensive disorders of pregnancy, Echocardiography, Meta-analysis

Full search strategy

Pubmed (Medline)

1. preeclamp*.tw,kf.
2. pre-eclamp*.tw,kf.
3. preeclampsia/
4. (hypertensive disorder* adj2 pregnancy).tw,kf.
5. hypertensive pregnancy disorder*.tw,kf.
6. HDP.tw,kf.
7. hypertension, pregnancy induced/
8. Eclampsia/ or HELLP Syndrome/ or Pre-Eclampsia/
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. speckle*.tw,kf.
11. strain*.tw,kf.
12. global longitudinal strain.tw,kf.
13. GLS.tw,kf.
14. 2DSTE.tw,kf.
15. Ventricular Dysfunction, Left/ or Ventricular Function, Left/
16. 10 or 11 or 12 or 13 or 14 or 15
17. 9 and 16

Embase

1. preeclamp*.tw,kw.
2. pre-eclamp*.tw,kw.
3. preeclampsia/
4. (hypertensive disorder* adj2 pregnancy).tw,kw.
5. hypertensive pregnancy disorder*.tw,kw.
6. HDP.tw,kw.
7. hypertension, pregnancy induced/
8. Eclampsia/ or HELLP Syndrome/ or Pre-Eclampsia/
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. speckle*.tw,kw.

11. strain*.tw,kw.
12. global longitudinal strain.tw,kw.
13. GLS.tw,kw.
14. 2DSTE.tw,kw.
15. Ventricular Dysfunction, Left/ or Ventricular Function, Left/
16. 10 or 11 or 12 or 13 or 14 or 15
17. 9 and 16
18. limit 17 to conference abstracts
19. 17 not 18

Table S1 Supplementary: Patients' characteristics at cardiac assessment.

Authors (year)	Group	N°	Mean maternal age±SD (years)	Mean BMI ±SD	Mean sBP ±SD (mmHg)	Mean dBP ±SD (mmHg)	Medicated (% of participants)	GA at delivery ±SD (weeks)
Ajmi et al. (2018)	HDP	30	31	31.23	162	102	NR	35
	Control	30	31	27.48	118	72	NR	38
Ambrožič et al. (2020)	PE	30	31±6	29.4±4	137±13.3	91±8.9	100	32.7±12.5
	Control	30	33±5	28.7±3.9	122±14.1	75±9.6	0	38.4±3.8
Buddeberg et al. (2018)	PE	30	33.17±5.37	34.8±6.38	142±7	95±6	0	NR
	Control	40	34.8±4.03	28.14±2.96	109±9	74±8	0	NR
Cho et al. (2011)	GH	106	32.3±4.2	27.73±4.57	152.6±17.6	94.9±13.3	0	NR
	Control	93	30.2±4.4	29.67±4.18	118.2±13	73.5±11.1	0	NR
Cong et al. (2015)	EOPE	43	32.05±6.42	27.91±3.95	152.81±18.05	102.44±13.67	0	31.02±3.35
	Control	41	29.9±5.55	24.57±2.26	104.22±7.62	67.27±7.07	0	39.4±1.88
	LOPE	41	30.88±5.71	29.81±3.2	143.83±14.23	98.59±12.79	0	37.23±2.02
	Control	40	29.03±4.56	25.36±1.81	106.2±8.94	70±7.41	0	39.02±1.14
Lafuente-Ganuza et al. (2021)	PE	36	34.55±5.46	NR	NR	NR	NR	34.63±3.17
	Control	19	NR					NR

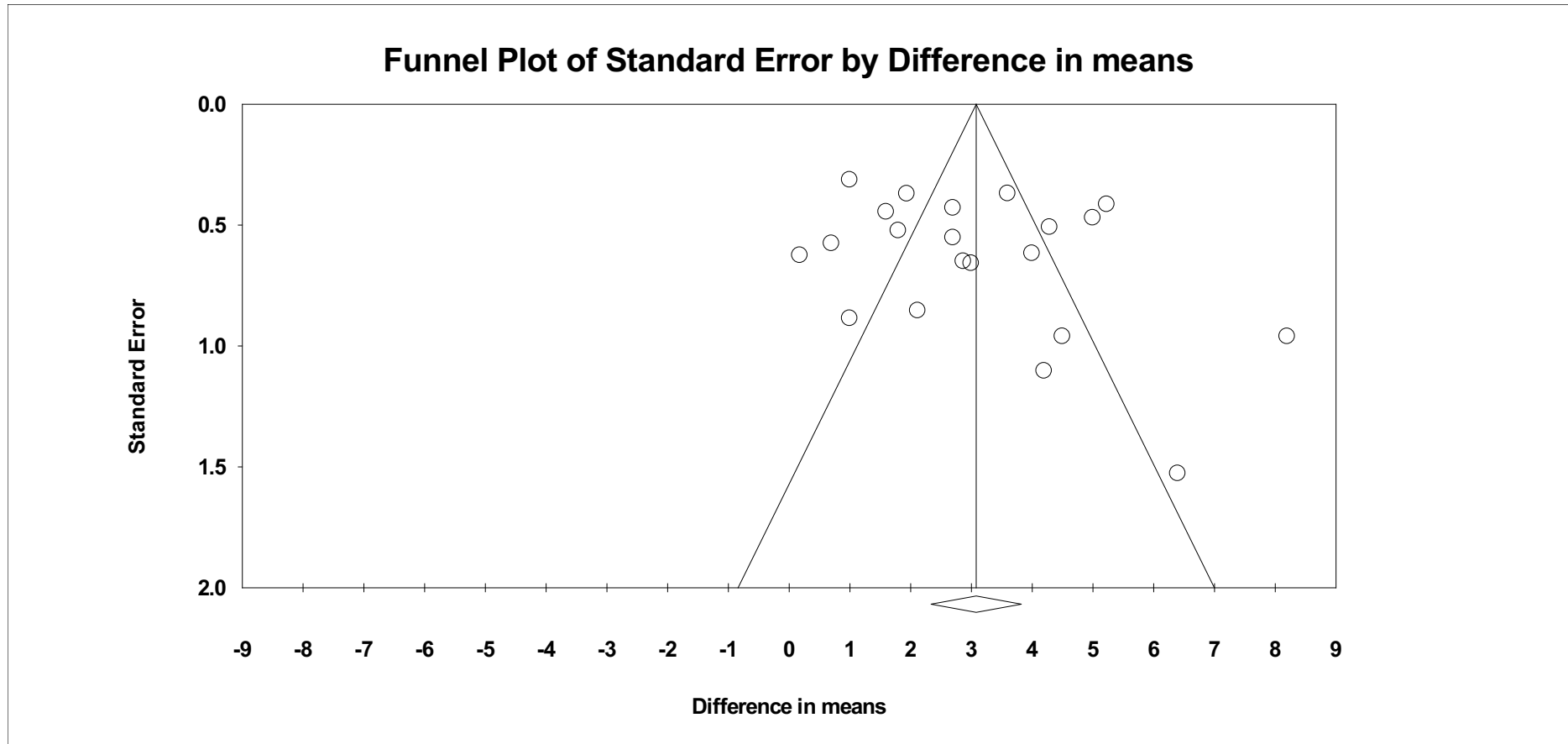
Levine et al. (2019)	PE	29	30.7±7.32	33.9±6.59	142.1±28.1	82.4±20	NR	33±2.22
	Control	29	27.8±5.53	33.4±5.85	119.4±13.6	70.7±12.3	NR	39±0.74
Mostafavi et al. (2019)	PE	60	33.13±6.57	31.8±5.44	NR	NR	NR	NR
	Control	40	32.2±6.12	30.72±4.21	NR	NR	NR	NR
Pan et al. (2019)	PE	33	30.5±6	28±3.9	157.8±19.6	98.5±10.6	0	NR
	Control	20	28.7±5.1	24.3±3.2	116±8.5	73.2±10.3	0	NR
Paudel et al. (2020)	PE	55	30.7±5.9	31.25	164±11	91±9	100	36±3
	Control	35	28.8±5.7	29.71	111±12	71±7	100	38±4
Shahul et al. (2016)	PE	62	33.6±5.7	NR	138.8±13.4	81.5±10.4	NR	34.1±3.7
	GH or CHT	40	32.1±5.9	NR	126.6±16.1	74.3±13.4	NR	37.5±2.1
	Control	105	30.7±6.1	NR	104.8±9.7	61.5±7.6	NR	35.1±4.1
Shahul et al. (2012)	PE	11	31.8±6.6	NR	138±16.31	87±11.12	NR	36.7±3.34
	GH or CHT	11	35.5±8.23	NR	141±12.6	88±9.64	NR	38±1.78
	Control	17	29±6.08	NR	112±9.64	69±5.93	NR	39.3±1.7
Sun et al. (2020)	PE	132	32.52±7.63	31.87±3.62	146.85±10.34	101.79±13.39	NR	NR
	Control	87	29.87±6.11	30.64±4.92	112.54±9.29	71.66±7.82	NR	NR
Vaught et al. (2018)	PE	63	29.2±6.2	33.1±9.93	185±15	103±9	0	NR
	Control	36	30.7±5.7	29.7±7.11	116±3	67±2	0	NR

Ye et al. (2021)	GH	57	31.39±3.45	22.06±2.88	152.74±9.89	93.35±10.09	NR	37.72±2.90
	Control	50	32.06±3.98	22.10±3.02	118.40±9.11	73.46±7.22	NR	39.16±1.13
Yu et al. (2018)	PE	25	NR	24.9±1.8	157±14	100±11	0	NR
	GH	27	29±7	23.6±2.3	138±10	65±7	0	NR
	Control	30	29±6	23.5±2.1	115±8	87±7	0	NR
Zamen et al. (2018)	PE	30	27.4±3.8	24.6±3.17	158.53±10.8 ₉	100.93±6.59	NR	NR
	Control	30	27.1±4.3	23.4±4.14	118.33±7.06	71.33±7.09	NR	NR

GA gestational age, NR not reported, HDP hypertensive disorders of pregnancy, PE pre-eclampsia, GH gestational hypertension, CHT chronic hypertension, EO-PE early onset pre-eclampsia, LOPE late onset pre-eclampsia, BMI body mass index, sBP systolic blood pressure, dBP diastolic blood pressure, SD standard deviation.

Publication Bias

Figure S1: Funnel plot with standard error vs difference in means.



Pre-existing chronic hypertension sub-group analysis:

Figure S2: HDP sub-group analysis excluding pre-existing chronic hypertension.

HDP vs Control- No CHT Subgroup

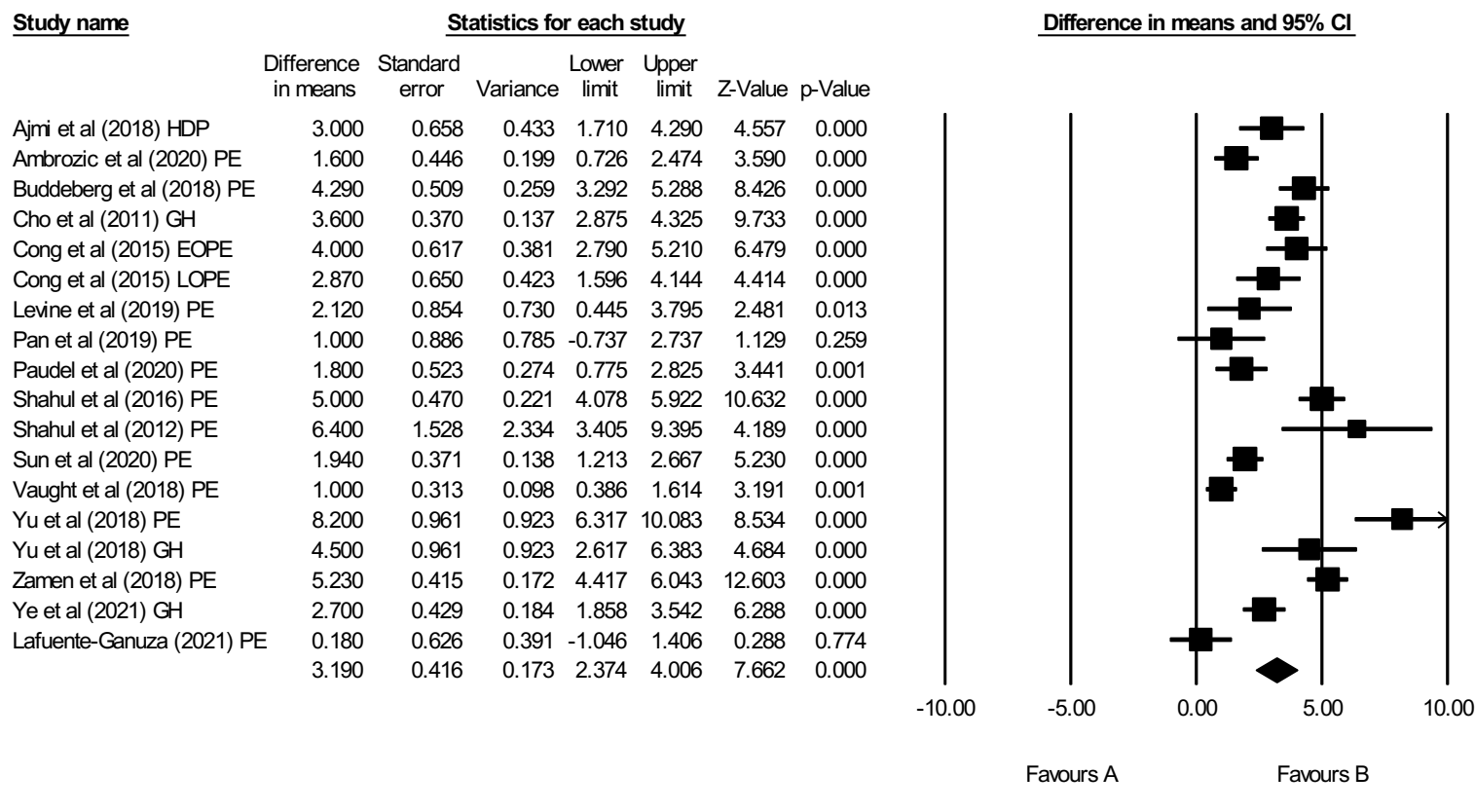


Figure S3: PE sub-group analysis excluding pre-existing chronic hypertension.

PE vs Control- No CHT Subgroup

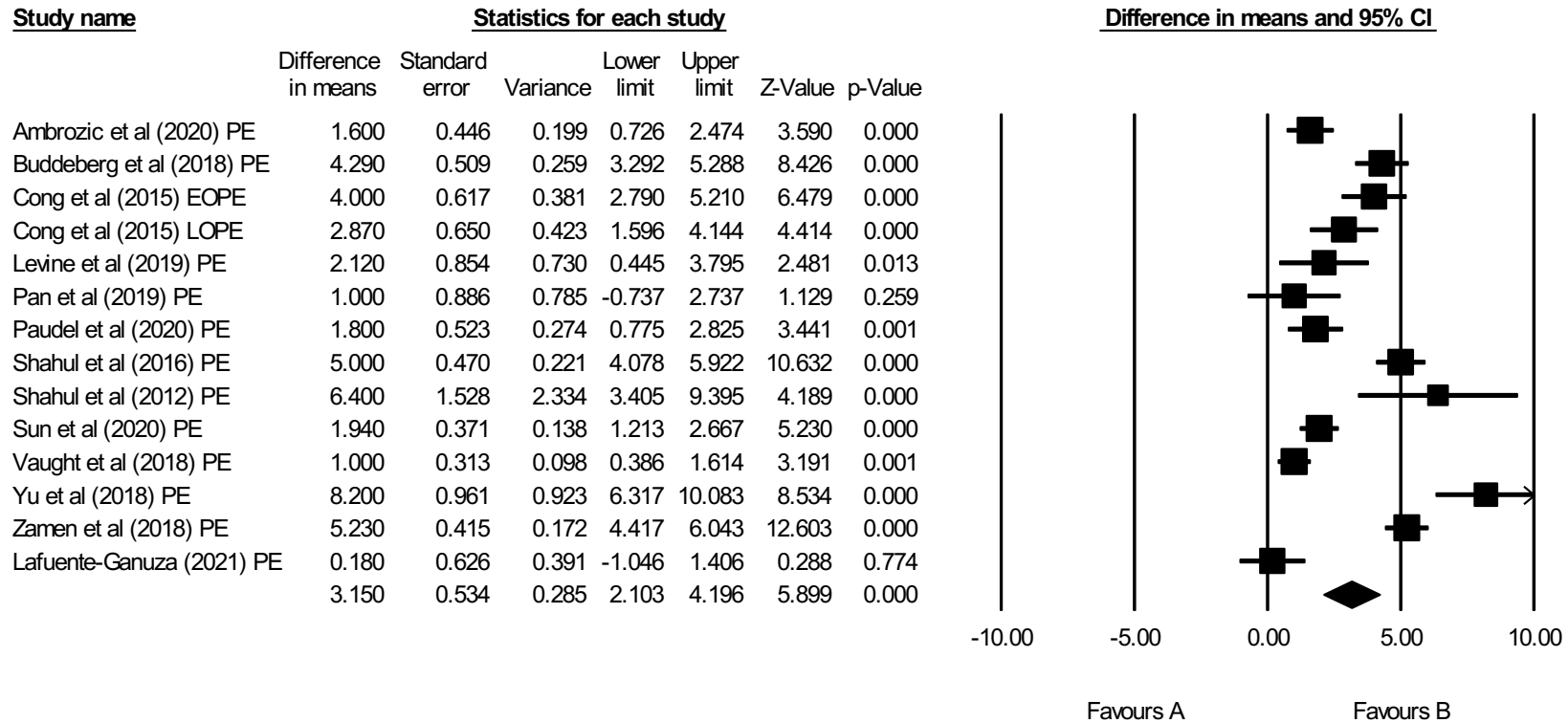


Figure S4: Gestational hypertension analysis.

Gestational Hypertension vs Control

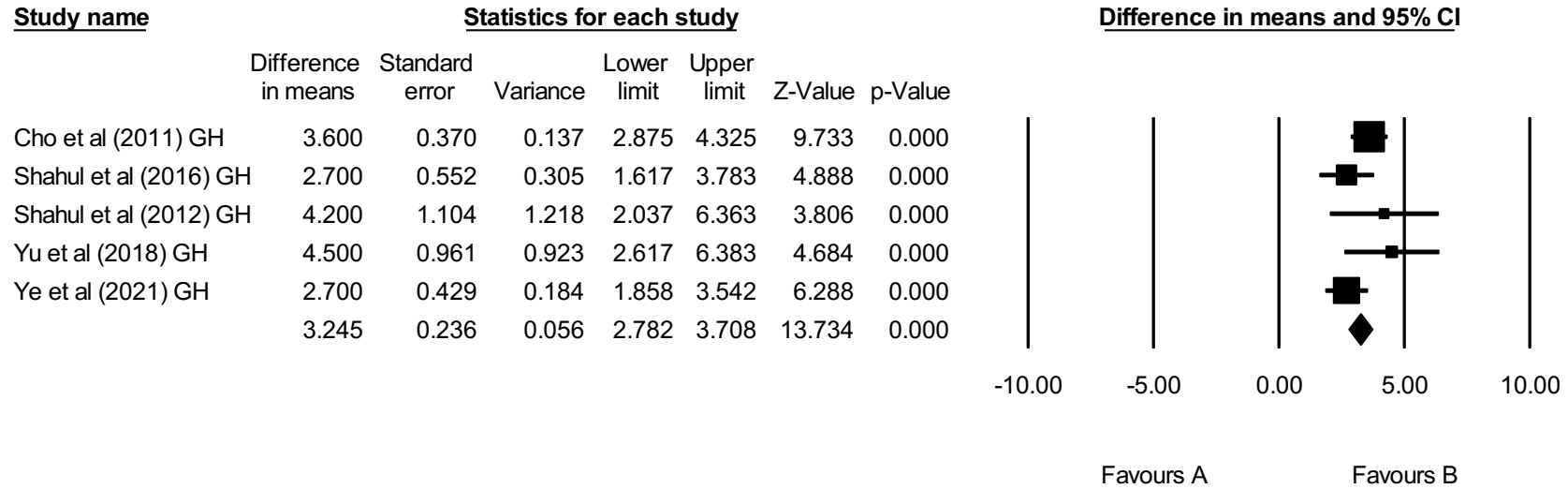
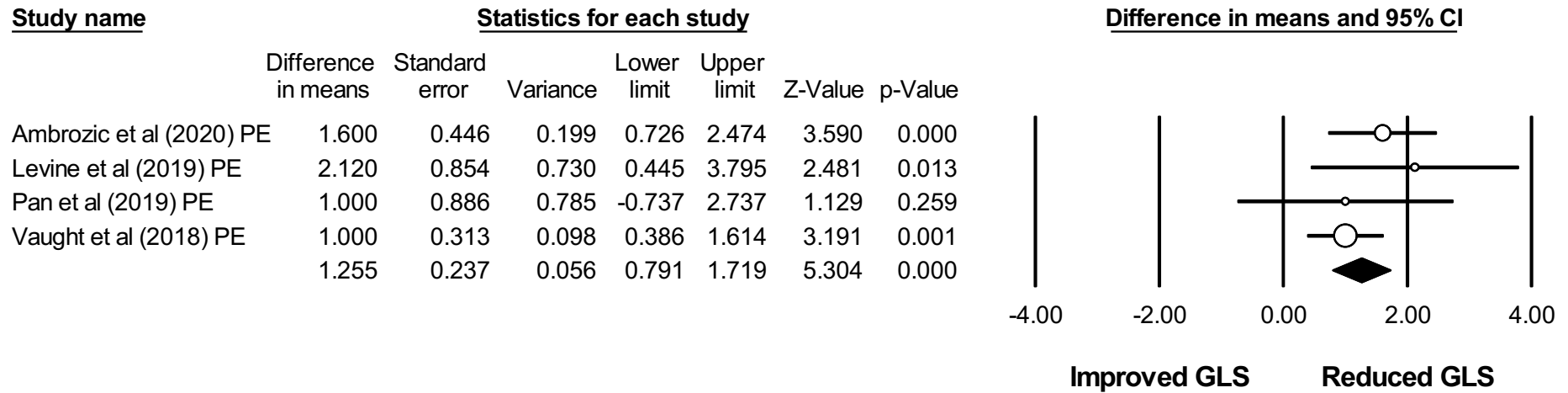


Figure S5: Severe PE sub-group analysis.

Severe PE vs Control Sub-group



Moderator analysis

Figure S6: Moderator analysis bubble plot for BMI.

