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## **Supplementary Material**

**Article Title:** Adjunctive Use of a Standardized Extract of *Withania somnifera* (Ashwagandha) to Treat Symptom Exacerbation in Schizophrenia: A Randomized, Double-Blind, Placebo-Controlled Study

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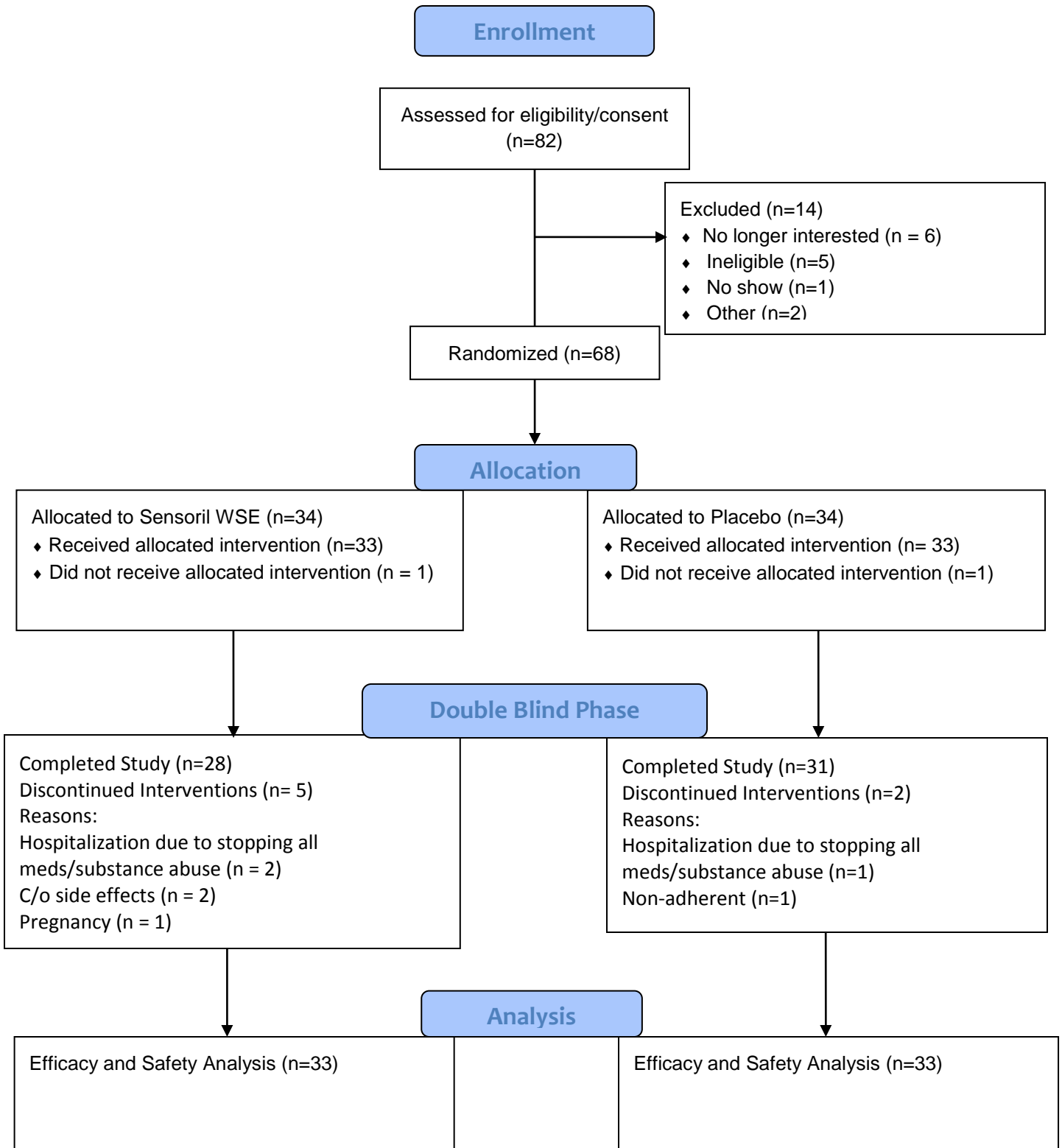
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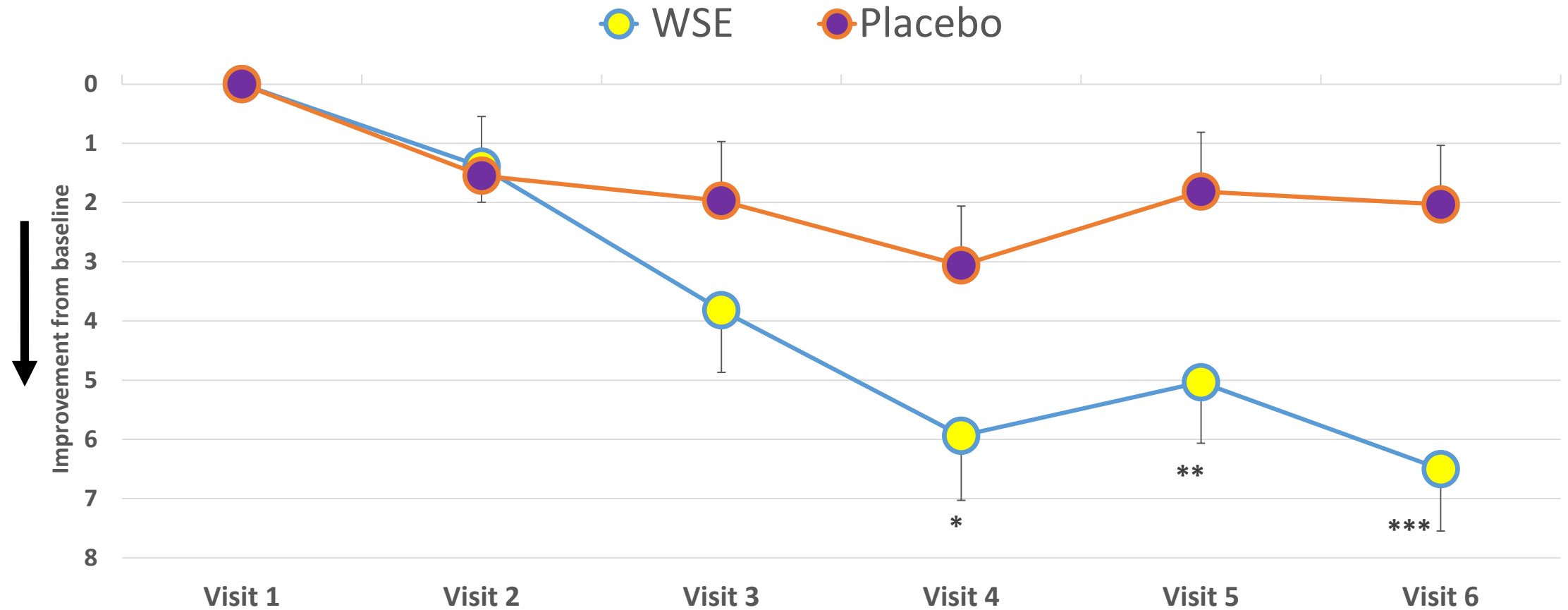
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Supplementary  
Figure 1

Patient Disposition in Study



## Supplementary Figure 2. Change in Perceived Stress Scale Scores



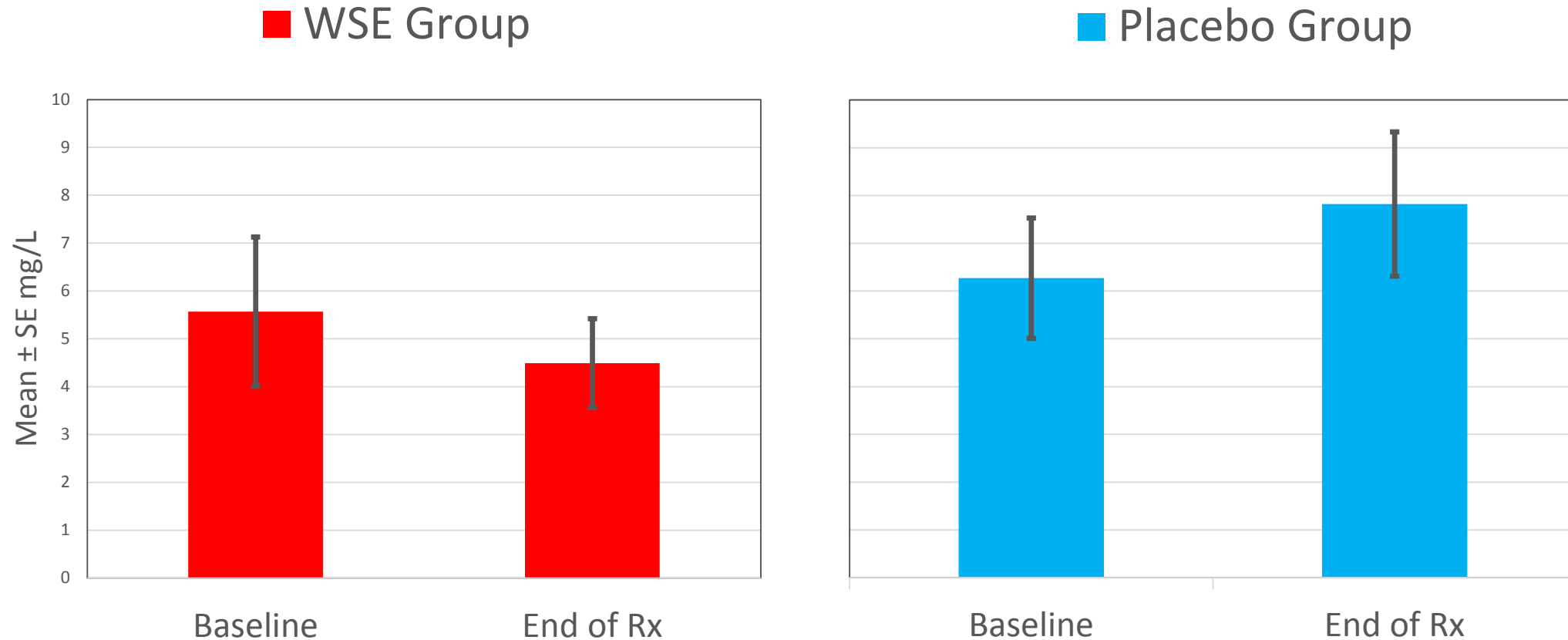
PSS scores: \*Visit 4:  $p = 0.025$ , \*\* Visit 5:  $p = 0.051$ , \*\*\* Visit 6:  $p = 0.004$ , see Supplementary e table 1 for mixed model repeat measures analyses

Visit 1 = baseline, Visit 2 = randomization, Visit 3 = 2 weeks, Visit 4 = 1 month, Visit 5 = 2 months, Visit 6 = 3 months

WSE = Withania somnifera extract

# hsCRP Levels in Patients Receiving Withania somnifera Extract or Placebo Before and End of Rx

Supplementary Figure 3a

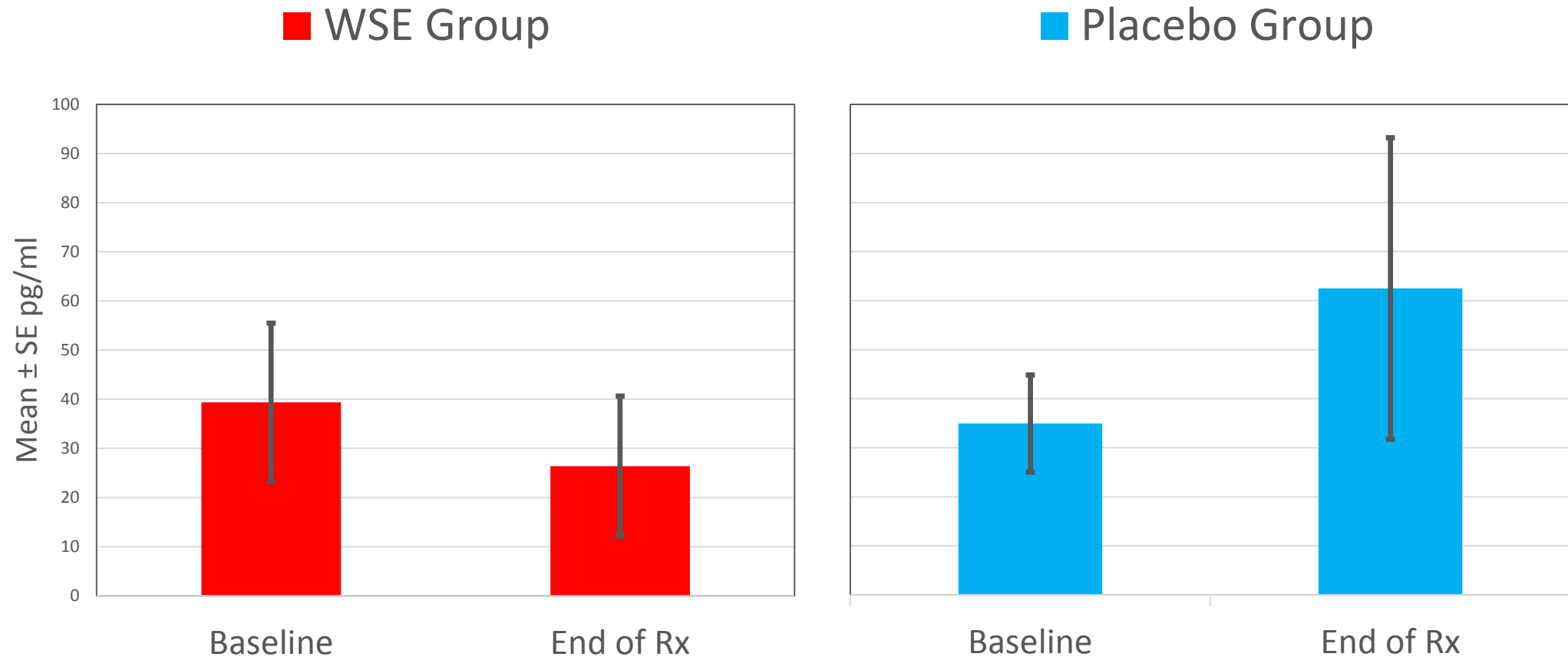


hsCRP declined more in the WSE group , but was not significantly different from placebo

SE = standard error

# S100b Levels in Patients Receiving Withania somnifera Extract or Placebo Before and End of Rx

Supplementary Figure 3b



S100b declined more in the WSE group , but was not significantly different from placebo  
SE = standard error

### Supplementary Table 1.

MMRM Analyses Showing Parameter Estimates of Fixed Effects for Treatment \* Visit Interaction, i.e. Time Points at which the Group Receiving WSE Separates from Placebo, when compared to the baseline for PANSS total, positive, negative, general scores and for PSS scores

PANSS Total: Estimate of Fixed Effects					
PARAMETER	ESTIMATE	STD. ERROR	df	t	SIGNIFICANCE
Treatment * Visit 2	-.515152	1.968737	141.010	-.262	.794
Treatment * Visit 3	-.787879	1.959733	155.444	-.402	.688
Treatment * Visit 4	-4.072527	1.949700	194.688	-2.089	.038
Treatment * Visit 5	-6.864101	1.899797	279.499	-3.613	.000
Treatment * Visit 6	-9.473726	1.667723	276.864	-5.681	.000

PANSS Positive Symptoms: Estimate of Fixed Effects					
PARAMETER	ESTIMATE	STD. ERROR	df	t	SIGNIFICANCE
Treatment * Visit 2	.060606	.617366	195.375	.098	.922
Treatment * Visit 3	-.666667	.616855	200.967	-1.081	.281
Treatment * Visit 4	-.902528	.620219	223.652	-1.455	.147
Treatment * Visit 5	-1.351543	.618590	285.002	-2.185	.030
Treatment * Visit 6	-1.775091	.569877	260.751	-3.115	.002

PANSS Negative Symptoms: Estimate of Fixed Effects					
PARAMETER	ESTIMATE	STD. ERROR	df	t	SIGNIFICANCE
Treatment * Visit 2	-.303030	.597105	132.779	-.507	.613
Treatment * Visit 3	-1.000000	.591561	153.844	-1.690	.093
Treatment * Visit 4	-1.312029	.582846	202.762	-2.251	.025
Treatment * Visit 5	-1.802597	.558483	290.218	-3.228	.001
Treatment * Visit 6	-2.493988	.477042	277.190	-5.228	.000

PANSS General Psychopathology: Estimate of Fixed Effects					
PARAMETER	ESTIMATE	STD. ERROR	df	t	SIGNIFICANCE
Treatment * Visit 2	-.272727	1.031668	173.633	-.264	.792
Treatment * Visit 3	.060606	1.029368	183.881	.059	.953
Treatment * Visit 4	-2.783958	1.030242	215.906	-2.702	.007
Treatment * Visit 5	-3.669332	1.016119	288.116	-3.611	.000
Treatment * Visit 6	-5.133275	.912648	266.489	-5.625	.000

PSS Score: Estimate of Fixed Effects					
PARAMETER	ESTIMATE	STD. ERROR	df	t	SIGNIFICANCE
Treatment * Visit 2	-.119485	1.283891	288.114	-.093	.926
Treatment * Visit 3	-1.783088	1.283891	288.114	-1.389	.166
Treatment * Visit 4	-2.924631	1.297917	289.636	-2.253	.025
Treatment * Visit 5	-2.582204	1.318522	289.466	-1.958	.051
Treatment * Visit 6	-3.911671	1.332804	235.515	-2.935	.004

Visit 2 = randomization, Visit 3 = 2 weeks of Rx, Visit 4 = one month of Rx, Visit 5 = two months of Rx and Visit 6 = three months of Rx

Abbreviations: MMRM = mixed model repeat measures analyses, PANSS = Positive and Negative Syndrome Scale, PSS = Perceived Stress Scale

It is important for the reader to note that even though the PANSS positive symptom scores for WSE at Visits 5 and 6 are statistically significant versus placebo, that the **overall Main Effect for PANSS positive symptoms was not significant.**

<b>Supplementary Table 2 - Changes in Weight, Body Mass Index and Vital Signs</b>							<b>Between Groups Statistics</b>
	<b>WSE</b>			<b>Placebo</b>			
	Baseline Mean (SD) N = 33	End of Rx Mean (SD) N = 33	Delta Mean (SD) N = 33	Baseline Mean (SD) N = 33	End of Rx Mean (SD) N = 33	Delta Mean (SD) N = 33	t-test, df, p,
Body Weight (lbs)	194.61 (49.57)	197.00 (51.94)	2.40 (7.04)	191.33 (41.29)	193.06 (41.33)	1.73 (5.66)	0.42, 64, p = 0.67
Body Mass Index	30.00 (7.56)	30.33 (8.04)	0.33 (1.08)	30.36 (6.35)	30.56 (6.24)	0.20 (0.91)	0.53, 64, p = 0.60
Blood Pressure							
Systolic (mm/Hg)	124.67 (10.53)	123.36 (9.30)	-1.31 (8.36)	123.42 (15.32)	118.39 (23.19)	-5.03 (25.24)	0.81, 64, p = 0.42
Diastolic (mm/Hg)	79.15 (7.95)	79.06 (7.31)	-0.09 (6.27)	76.52 (11.52)	75.55 (13.21)	-0.97 (13.60)	0.34, 64, p = 0.74
Pulse (beats/min)	76.18 (13.38)	75.42 (14.64)	-0.76 (10.59)	74.91 (11.75)	76.42 (9.56)	1.51 (8.53)	0.96, 64, p = 0.34
Temperature (°F)	97.38 (0.57)	97.37 (0.73)	-0.01 (0.62)	97.36 (0.72)	97.31 (0.46)	0.05 (0.51)	0.53, 63, p = 0.60

Abbreviations: SD= standard deviation, Rx= treatment, df= degrees of freedom, WSE = standardized extract of Withania somnifera