Efficacy of treatments targeting hypothalamic-pituitary-adrenal systems for major depressive disorder: a meta-analysis

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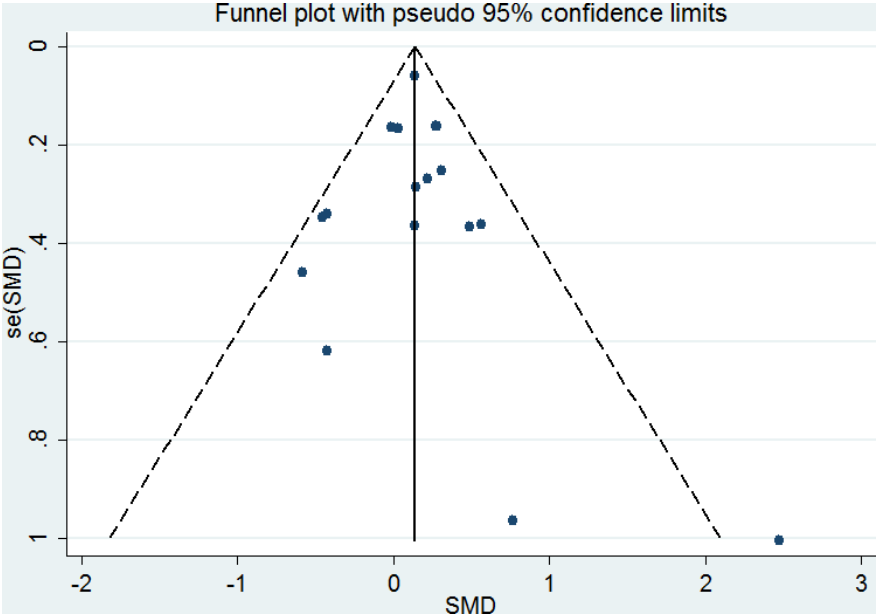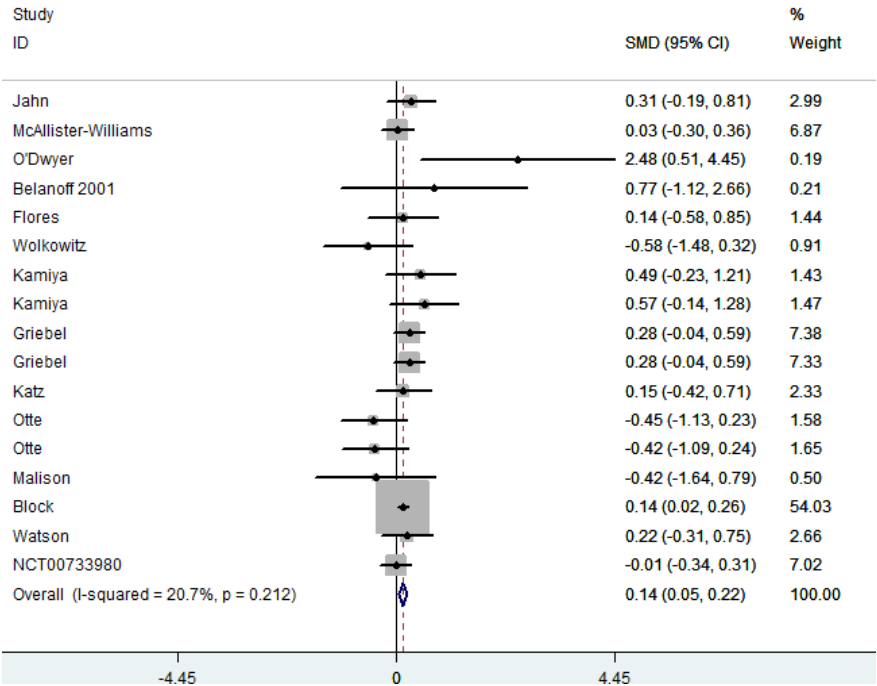
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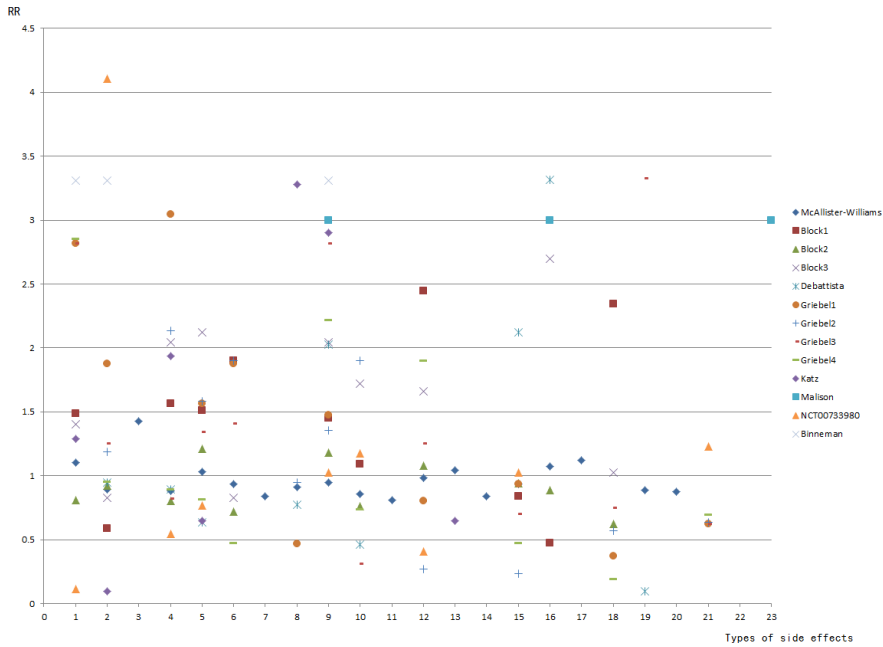
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Abstract

Abnormal hypothalamic-pituitary-adrenal (HPA) axis has been implicated in major depressive disorder (MDD). The aims of this meta-analysis were to determine the effect and safety profile of HPA-targeting medications for MDD. World of Science and PubMed databases were comprehensively searched up to March 2021. All randomized controlled trials (RCTs) and open-label trials exploring antiglucocorticoid and related medications in patients with depression were included. In the meta-analysis, we identified 16 RCTs and seven open-label studies that included 2972 subjects. Our study suggested that patients with MDD may benefit from mifepristone and V1B receptor antagonist treatments that have tolerable side effects. HPA-based medications are promising for depression treatment. However, additional high-quality RCTs, including head-to-head trials, are needed.

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Study ID	SMD (95% CI)	% Weight
Jahn	0.31 (-0.19, 0.81)	2.99
McAllister-Williams	0.03 (-0.30, 0.36)	6.87
O'Dwyer	2.48 (0.51, 4.45)	0.19
Belanoff 2001	0.77 (-1.12, 2.66)	0.21
Flores	0.14 (-0.58, 0.85)	1.44
Wolkowitz	-0.58 (-1.48, 0.32)	0.91
Kamiya	0.49 (-0.23, 1.21)	1.43
Kamiya	0.57 (-0.14, 1.28)	1.47
Griebel	0.28 (-0.04, 0.59)	7.38
Griebel	0.28 (-0.04, 0.59)	7.33
Katz	0.15 (-0.42, 0.71)	2.33
Otte	-0.45 (-1.13, 0.23)	1.58
Otte	-0.42 (-1.09, 0.24)	1.65
Malison	-0.42 (-1.64, 0.79)	0.50
Block	0.14 (0.02, 0.26)	54.03
Watson	0.22 (-0.31, 0.75)	2.66
NCT00733980	-0.01 (-0.34, 0.31)	7.02
Overall (I-squared = 20.7%, p = 0.212)	0.14 (0.05, 0.22)	100.00

Funnel plot with pseudo 95% confidence limits

2

RR
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0

0   1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16   17   18   19   20   21   22   23

Types of side effects

Legend:
- McAllister-Williams
- Block1
- Block2
- Block3
- Debattista
- Griebel1
- Griebel2
- Griebel3
- Griebel4
- Katz
- Malison
- NCT00733980
- Binneman

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Table 1.docx   available   at   https://authorea.com/users/730937/articles/710302-efficacy-of-treatments-targeting-hypothalamic-pituitary-adrenal-systems-for-major-depressive-disorder-a-meta-analysis

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Table 2.docx   available   at   https://authorea.com/users/730937/articles/710302-efficacy-of-treatments-targeting-hypothalamic-pituitary-adrenal-systems-for-major-depressive-disorder-a-meta-analysis