

Insomnia Update

Clinical Academic Rounds
10.05.2017

* Video “Wide Awake” – Alan Berliner

Insomnia Disorder

- * Dissatisfaction with sleep
 - * Difficulty initiating or maintaining sleep
- * Daytime impairment
- * At least 3 nights per week
- * At least 3 months
- * Despite adequate opportunity to sleep

**British Medical Journal, Volume II for 1877,
July 14 1877, P47.
Queen's Hospital, Birmingham - Dr
Sawyer Insomnia**

Ordinary cases of insomnia can be divided into three classes: Senile, toxic and psychical. In the senile form of the affection, the disorder depends on degeneration of the cerebral arteries, and is difficult to cure; in the toxic abuse of alcohol, tea or tobacco, and ceases upon the removal of the cause; in the psychical it arises from continued and excessive mental strain, grief, anxiety, worry, etc and is usually successfully treated by full doses of bromides conjoined with tinctures of ergot and cod liver oil. If the insomnia be serious, it must be stopped at once by hypnotics, preferably by opium.

Case example

- * 44 yo woman,
- * Initial insomnia +multiple night awakenings x 4 years
- * Decr. energy, work performance
- * BT 9 pm, SOL 4 hrs, 4-5 awak.up to 1 hr,
- * wake 6:30 am, exhausted
- * Zopiclone 7.5 mg with partial response and worry about tolerance, Citalopram 30 mg
- * Constant worry, tension in neck and back
- * Panic attacks in past

Insomnia and PSG

Parameter	PI	GS
SOL (min)	20.0 (17.1)	14.2 (11.3) *
TST (min)	391.1 (53.4)	414.8 (46.3) *
WASO (min)	58.5 (43.1)	36.8 (25.5) *
S1 (%)	7.0 (3.4)	6.8 (2.8)
S2 (%)	53.8 (8.1)	54.4 (6.8)
SWS (%)	10.9 (7.4)	12.8 (6.7) *
REM (%)	20.3 (5.1)	22.3 (4.8) *

Baglioni C., Sleep Med Rev 2014

Sleep misperception

- * Tang & Harvey, *Beh Sleep Med* 2005
- * Van den Berg et al., *J Sleep Res* 2008
- * Wicklow & Espie, *Beh Res&Ther* 2000

PTSD

- * Dagan et al., *J Psychosom Res* 1997
- * Klein et al., *J Sleep Res* 2003

Bipolar disorder

* Harvey et al. *Am J Psychiatry* 2005

Unipolar depression

* Rotenberg et al., *Int J Psychophys* 2000

Alcoholism recovery

* Currie et al., *Behav Sleep Med* 2004

Chronic fatigue

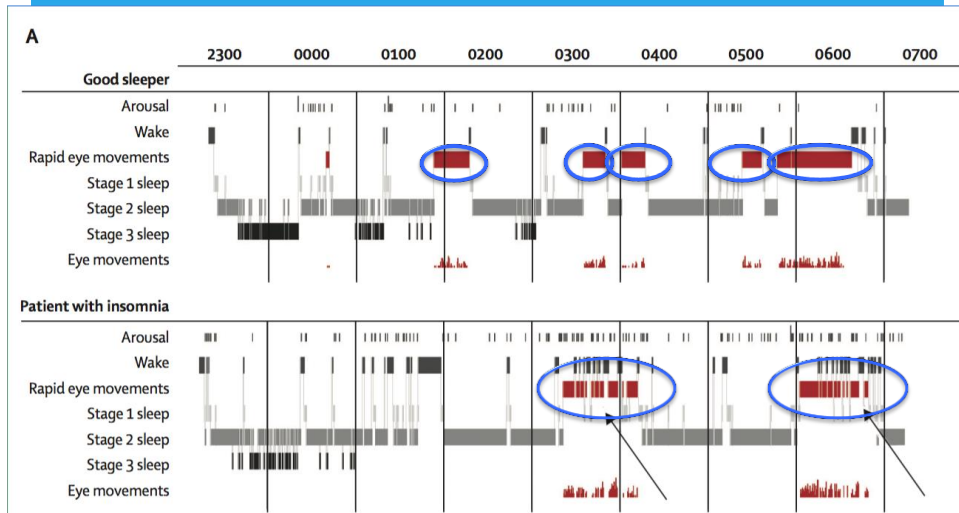
* Neu et al., *Neuropsychobiology* 2007

Rheumatoid arthritis

* Hirsch et al., *Arthritis and Rheumatism* 1994

Implications





Sleep in insomnia

- * Changes in microstructure
 - * ↑ microarousals
 - * ↑ fast EEG frequencies

Insomnia and REM sleep

- * Perception of wakefulness
- * No difference in positive emotions
- * Higher frequency of negative emotions

Riemann D., 2015

Insomnia and dream content

- * More negative content
- * Less activity (action)

Bastien C., 2016

Insomnia and arousal

- * Temperature
- * Resting metabolic rate
- * Cortisol
- * Sympathetic tone

REM and emotions

Fragmented REM

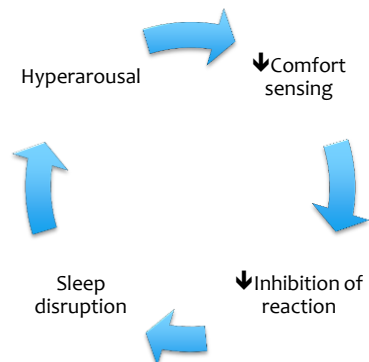
Slower distress
downregulation

Hyperarousal

Wassing, PNAS 2016



Is it all about sleep?



Altena E. 2014

CBT-I Meta-analysis

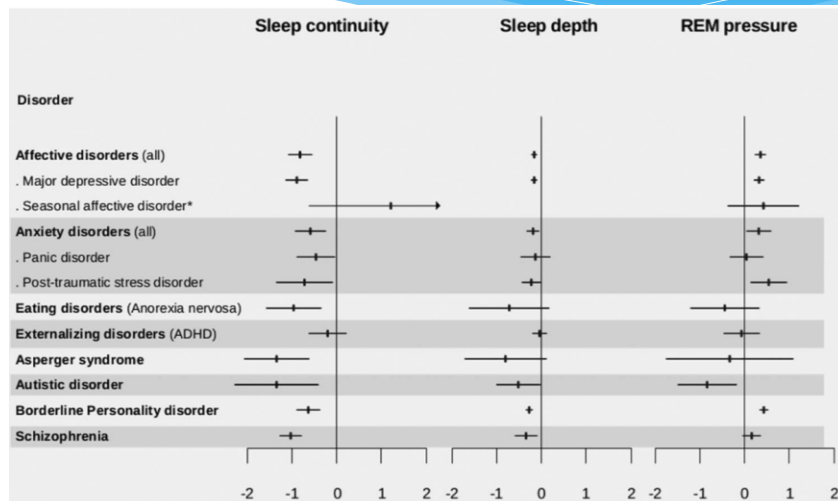
Table 2

Main post-test effects of insomnia treatments.

Outcome	N _c	Hedges g (95% CI)	I ² (95% CI)	NNT
Insomnia severity index	38	0.98 (0.82–1.15)	74 (63–80)	1.95
Without seven outliers ^a	31	0.92 (0.79–1.06)	51 (19–67)	2.07
Sleep efficiency (SE)	79	0.71 (0.61–0.82)	70 (61–75)	2.60
Without 14 outliers ^b	65	0.68 (0.60–0.74)	34 (5–51)	2.70
Pittsburgh sleep quality index ^c	19	0.65 (0.51–0.79)	39 (0–64)	2.82
Wake after sleep onset (WASO)	71	0.63 (0.53–0.73)	60 (46–68)	2.91
Without nine outliers ^d	62	0.66 (0.57–0.74)	40 (14–55)	2.78
Sleep onset latency (SOL)	108	0.57 (0.50–0.65)	48 (33–58)	3.18
Without nine outliers ^e	99	0.55 (0.48–0.61)	27 (3–43)	3.31
Sleep quality (SQ)	40	0.40 (0.24–0.56)	74 (64–80)	4.50
Without six outliers ^f	34	0.45 (0.31–0.59)	49 (17–65)	4.00
Number of awakenings (NWAK)	36	0.28 (0.16–0.40)	29 (0–52)	6.41
Without nine outliers ^g	34	0.28 (0.17–0.38)	11 (0–42)	6.41
Total sleep time (TST)	91	0.16 (0.08–0.24)	47 (30–58)	11.11
Without nine outliers ^h	82	0.17 (0.11–0.24)	14 (0–35)	10.42

95% CI = 95% confidence interval; N_c = number of comparisons; NNT = number needed to treat.

VanStraten, Sleep Med Rev2017



Baglioni C., 2016

SleepWellNS

<http://sleepwellns.ca/>

Video – Eus Van Someren



*“For some must watch, while some must
sleep: So runs the world away.”*

W. Shakespeare
Hamlet, act 3, scene 2