



CLINICAL
EXCELLENCE
COMMISSION

Medication and Falls

Daniel Lalor

Project Manager, Medication Safety

15th November 2010



Medicines Use

- Australia spends \$10 Billion plus per annum on medicines
- 7 in 10 Australians will take at least one medication in any two week period
 - 9 out of 10 for older Australians
 - Polypharmacy is a considerable issue
- Average of 7.2 medicines taken per day by hospitalised patients



Medicines and Falls Risk

- Commonly used falls risk assessments
 - Ontario Modified Stratify: Sydney Scoring
 - FROP-COM
- Medicines affect many aspects of function relevant to falls risk
 - Mental Status
 - Toileting
 - Vision

Falls Risks - How?

Medicines that cause

- Drowsiness
- Dizziness
- Poor balance
- Changes to eyesight
- Diuresis
- Extra pyramidal side effects

Post falls risk

- Anticoagulants / antiplatelet agents



Falls Risk - Which Meds?

- Benzodiazepines / sedative hypnotics
- Antidepressants
- Antipsychotics
- Antihypertensives
- Hypoglycaemics
- Medicines for pain management
 - Opioids, anticonvulsants
- Diuretics / aperients



Benzodiazepines

- Multiple uses - mainly night sedation
 - Tolerance quickly develops
 - Metabolism is decreased in elderly and drugs accumulate
 - Dependence, confusion, memory impairment and incontinence
- Withdrawal can be difficult but is possible
 - Best option is not to start!

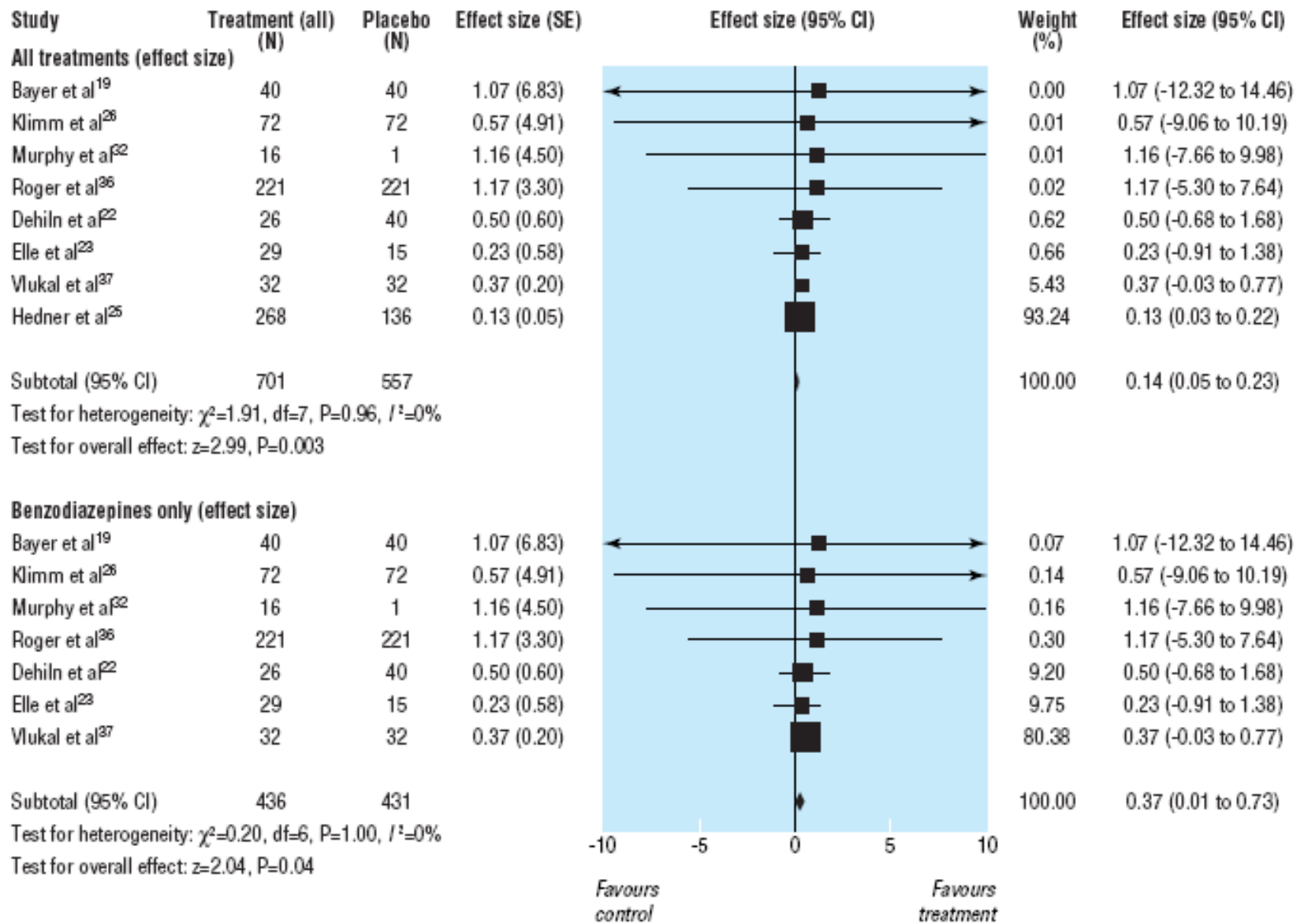


Fig 2 Mean effect size (95% confidence intervals) for subjective improvements in sleep quality with any sedative treatment and benzodiazepines only compared with placebo for at least five nights in people aged 60 or older with insomnia

Mean increase in sleep time = 25.2 mins NNT = 13 NNH = 6



Psychotropics

- Benzodiazepines, major tranquilisers & antidepressants
 - Campbell et al. 66% reduction in falls through removal of psychotropic meds
- Side-effects of psychotropic agents
 - Psychomotor effects, drowsiness, confusion, anticholinergic effects



Other Medicines

- Antihypertensives
 - Not a large amount of evidence but contribute to risk of hypotension
- Hypoglycaemic agents
 - Risk of hypoglycaemia and associated falls
- Diuretics / aperients
 - Limited evidence that they are independently predictive of fall, but must be considered in context



Pain Medicines

- Opioids
 - Morphine, oxycodone, tramadol
- Medicines for neuropathic pain
 - Anticonvulsants
- Tolerance and periods of high risk



Polypharmacy

- Taking 4 or more medicines, regardless of what they are, increases falls risk
- Drug Burden Index
- The prescribing cascade
- Medicines inappropriate in the elderly
 - Beers criteria



Take Home Messages

- Medicines are an important risk factor for falls.
- The elderly are more susceptible to side-effects.
- Non-pharmacological management should be employed as an alternative wherever possible.
- Be alert for signs of adverse drug effects.
- Even if using risk assessments that do not include medicines, be aware of their impact on function.



CLINICAL
EXCELLENCE
COMMISSION

References

Campbell AJ, Robertson MC, Gardner MM, Norton RN, Buchner DM.

Psychotropic medication withdrawal and a home-based exercise program to prevent falls: a randomized, controlled trial. *J Am Geriatr Soc* 1999; 47: 850-3.

Glass J, Lanctot KL, Herrmann N, Sproule BA Busto UE.

Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. *BMJ online*, doi:10.1136bmj.38623.768588.47 (published 11 November 2005).

Hilmer S.

The dilemma of polypharmacy. *Australian Prescriber* 2008; 31(1); 2-3.

Lawlor DA, Patel R, Ebrahim S.

Association between falls in elderly women and chronic diseases and drug use: cross sectional study. *BMJ* 2003; 327: 712-7.

Zeimer H.

Medications and Falls in Older People. *Journal of Pharmacy Practice and Research* 2008;38(2): 148-151.