Managing behavioural and psychological symptoms of dementia without drugs

Henry Brodaty

Dementia Collaborative Research Centre
www.dementiaresearch.org.au
Centre for Healthy Brain Ageing
www.cheba.unsw.edu.au
University of New South Wales (UNSW Australia)

Potential conflict of interests

• Advisor, consultant, remunerated speaker and/or investigator:
  – Baxter, Eisai, Janssen, Lilly, Lundbeck, Merck, Nutricia, Pfizer, Sanofi, Searle, Servier, TauRx,

What are BPSD?

• Aggression
• Agitation
• Anxiety
• Apathy
• Calling out/ screaming
• Delusions
• Depression
• Disinhibition (sexual)
• Elation/euphoria
• Hallucinations
• Irritability
• Night time disturbance
• Resistive
• Shadowing
• Swearing
• Wandering
Why are BPSD important?

- Ubiquitous, >90% of PWD during course
- Distress to PWD and to caregivers
- Increase rate of institutionalisation
- Higher rate of complications in hospital
- Associated with:
  - Faster rate of decline
  - Increased mortality

Effects of BPSD

- Residents with BPSD are more likely to:
  - be physically restrained
  - receive antipsychotic medication
  - negatively influence other residents
- BPSD increase the cost of institutional care for persons with dementia
- BPSD, especially aggression & calling out, increase nurse stress

Prevalence of BPSD

- In community
  - 2/3 PWD have at least one behavioural Sx
  - 1/3 PWD have significant symptoms
- In developing countries similar rates
- In residential care, residents with dementia:
  - 40-90% have BPSD
  - Rates in similar NHs vary >3-fold

References:


Prince M et al 2004;
Brodaty H et al, 2001;
Aetiology of BPSD

- Biological
- Psychological
- Interpersonal
- Environmental

Biological causes - intrinsic

- Frontal pathology (behavioural disturbance, disinhibition, depression)
- Basal ganglia lesions (delusions)
- Temporal lobe (delusions, hallucinations)
- Locus coeruleus (psychosis, depression)
- Chemical changes – serotonin, NA, DA
- Genes – serotonin, dopamine receptors
- Family history of psychiatric disorder

Biological causes - extrinsic

- Acute medical illness
- Medication
- Pain syndromes
- Constipation
- Sensory impairments
- Fatigue
- Fears
- Basic needs (hunger, thirst...)
- Psychiatric syndromes
The bio-psycho-social framework

<table>
<thead>
<tr>
<th>Environmental vulnerability</th>
<th>Neurological deterioration</th>
<th>Unmet needs; unable to comprehend or make needs known</th>
</tr>
</thead>
<tbody>
<tr>
<td>threshold for stress or stimuli</td>
<td>behavioural disinhibition</td>
<td>Behavioural: triggers and feedback from others control behaviours</td>
</tr>
</tbody>
</table>

1. Hall and Buckwalter 1987; 2 Algase et al. 1996; 3 Teri & Logsdon 2000; 4 Cummings JL

Before intervening ...

1. Is the description accurate?
2. Identification of target behaviour
3. Does behaviour require intervention?
4. Careful diary of behaviours
5. Exclude non-dementia causes
6. Correct sensory impairment - hearing, vision

The bio-psycho-social framework

<table>
<thead>
<tr>
<th>Socio-environmental</th>
<th>Interpersonal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Psychological</td>
</tr>
</tbody>
</table>
Why manage BPSD without drugs?

- Limited efficacy of
  - Antidepressants
  - Antipsychotics
  - Anticonvulsants
- Adverse effects
  - Falls, excess sedation, cognitive impairment
  - Stroke, death (antipsychotic)
- Sometimes drugs are indicated

Continuing vs stopping neuroleptics in dementia patients?

- 12 months RCT
- Continuous use of neuroleptics vs placebo
- For most AD patients withdrawal had no overall detrimental effect
- Continuers – worse verbal fluency (p<.002) and higher mortality
- Subgroup of pts with more severe symptoms (NPI ≥ 15) might benefit from continued Rx

Ballard et al 2008 PLOS Medicine, 5:587-599

DART-AD – mortality associated with continuous Rx

Ballard et al, 2009 Lancet Neurology, 8, 151–157
Antipsychotics for …

- Screaming X
- Wandering X
- Intruding into other people’s rooms X
- Aggression ? ✓ (but not first line)
- Delusions and hallucinations ? ✓ (but not 1st)
- Agitation ?

Antipsychotics

- Modest benefit for aggression and psychosis
- Associated adverse effects: falls, cognition ↓, CVAs, death
- 28% NH residents take antipsychotics
- Risperidone only PBS listed antipsychotic for BPSD (psychotic Sx and aggression in pts with dementia where non-pharma methods have been unsuccessful)
- Recent TGA restrictions beyond 12 weeks

Analgesics

- Cluster RCT, 60 NHs, 352 residents, 8 + 4wks
- Mod-severe dementia, CMAI ≥ 39
- Stepped analgesia vs usual care
- ≈ 70% of residents paracetamol 1gm tds
- CMAI ↓17% (9.6 vs 3.4, p<.001)
- CMAI score ↑ 4 weeks after stop analgesia
- NPI & Pain scores significantly ↓

Husebo BS et al, BMJ, 2011;343:d4065 doi: 10.1136/bmj.d0465
Analgesics

- No analgesic or low dose paracetamol → 3g/day paracetamol (n = 120, 69%)
- Full dose paracetamol or low dose morphine → 5mg bd morphine (n = 4, 2%)
- Low dose buprenorphine or unable to swallow → buprenorphine patch 5-10µg/h (n = 39, 22%)
- Neuropathic pain → pregabaline 25-300mg /d (n = 12, 7%)

Husebo BS et al, BMJ, 2011;343:d4065 doi: 10.1136bmj.d0465

Legal consent for psychotropics

- Depending on jurisdiction a Person Responsible must give consent
- Survey of 3 NHs; 77 residents without capacity to give informed consent; on psychotropics1
  - Only 6.5% written consent
  - + 6.5% partial or attempted consent

1 Rendina N et al, 2009

The bio-psycho-social framework

<table>
<thead>
<tr>
<th>Socio-environmental</th>
<th>Interpersonal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Psychological</td>
</tr>
</tbody>
</table>
How to intervene: Environment

- Modify environment rather than person
- Avoid too much or too little stimulation
- Adequate space
- Privacy available

How to intervene: Environment

- Secure grounds
- Personalised space
- Non-institutionalised environment
- Home-like

- Colour, furnishings, architecture
- Lighting
- Resident mix
- Size of residential facility

Enhanced Environment
Good evidence for …

- Careful optimisation of level of stimulation
  - Reduce unhelpful stimuli
    - eg noise, busy entry doors
  - Optimise helpful stimuli
    - eg light
- Good visual access to toilets
- Outdoor access with staff

Fleming R – www.dementiaresearch.org.au

Moderate evidence

- Small unit size
  - hard to differentiate effect of unit size from staff related factors
- Opportunity to engage in ordinary ADLs
  - hard to differentiate from staff support/engagement

Fleming R – www.dementiaresearch.org.au

Snoezelen: multisensory stimulation

- No significant benefit
- Significant treatment effect
  - Apathetic behaviour ↓
  - Loss of decorum ↓
  - Rebellious behaviour ↓
  - Aggressive behaviour ↓
  - Depression ↓
  - Well-being during morning care↑
- Numbers small, methodology moderate

1 Chung JCC, Lai CKY Cochrane review 2002
2 Van Weert et al, JAGS 2005;53: 24–33
3 Verkaik R et al, IJGP 2005; 20: 301–314
**Functional analysis (FA)**

- Inconclusive, but promising evidence for the efficacy of functional analysis interventions for challenging behaviour in dementia
- Functional analysis (FA): understand the function/meaning behind the person’s distressed behaviour → develop individually tailored strategies aimed at both the person with dementia and caregivers
- Any setting
  
  Moniz-Cooke ED et al, Cochrane Review 2012

---

**Functional analysis (FA)**

- 18 RCTs – most in family care settings
- Positive results in frequency of BPSD and the caregiver’s reaction to them.
- No significant effects in incidence or severity of mood and other problem behaviours or for caregiver mood or burden.
- Too early to reach a firm conclusion, emerging beneficial effects

  Moniz-Cooke ED et al, Cochrane Review 2012

---

**Aroma therapy**

Lavender  
Lemon Balm

Moderate evidence from Cochrane review
Lemon balm (melissa officinalis)
- Antibacterial (eugenol)
- Antiviral (tannins)
- Mild sedative or calming agent (terpenes)
- Antioxidant activity

Light therapy
- Five studies met criteria; only 3 able to be included
- No adequate evidence of effectiveness of BLT


Review on animal-assisted therapy (AAT)¹
- 11 papers examining the impact of AAT on BPSD regarding their ability to
  - Reduce agitation and/or aggression
  - Promote social behaviour
  - Improve nutrition
  - Role of pet substitutes
- Small samples, short duration, few studies

Robotic pets & companions and executive toys

• http://journalofdementiacare.com/robots-in-dementia-care/

Dolls

Two studies → benefits for aggression and agitation
One no significant benefit
No AEs
Evidence weak

R. Fernandez et al JBI Database of Systematic Reviews and Implementation Reports

The bio-psycho-social framework

<table>
<thead>
<tr>
<th>Socio-environmental</th>
<th>Interpersonal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Psychological</td>
</tr>
</tbody>
</table>
Family caregivers

- Family carers as therapists for people living in the community
- Systematic review
  - ES 0.34 for decreasing BPSD
  - ES 0.15 for decreasing caregiver “stress”
  - Effect size > drug treatments


CGs administer behavioural treatments for depression to patients with AD

- Behaviour therapies (pleasurable events schedule or problem solving techniques) → pt depression Sx & Dx better than controls
- Improvements maintained @ 6 months
- Bonus: CGs’ depression better

Teri et al, J. Gerontol. 1997; 52B:159-166

Dementia Care Mapping & Person Centred Care for agitation

Cost for PCC = $6 to reduce a point on CMAI

Chenoweth et al. Lancet Neurology 2009
PerCen Trial
- Randomised controlled trial, 38 NHs
  - Person centred care (PCC)
  - Person centred environment (PCE)
  - PCC + PCE
  - Usual care
- Findings – all groups improved, PCC best
- No extra benefit from PCE
- Huge issues in implementing PCE

Chenoweth L et al, Int Psychogeriatrics 2014, 26:1147-60

The bio-psycho-social framework

Socio-environmental | Interpersonal

Biological | Psychological

Psychological Mx approaches to BPSD
- 1632 studies identified → 162 met inclusion criteria → 9 studies with Level 1 evidence
- Psycho-education for CGs effective
- Benefits lasted months
- Other CG interventions not effective
- Behaviour Mx techniques centering on individual pts’ or CG behaviours → similar benefits
- Residential care staff education beneficial
- Cognitive stimulation similar effects

Psychological approaches to BPSD

- Music therapy
- Snoezelen
- Sensory stimulation
- Interventions that changed visual environment looked promising, but ...
  ... → research required

\[ \text{Useful during treatment but not long term} \]


Individualised music\(^1\)

![Graph showing agitation scores over time for music conditions.]

\[ \text{Gerdner L et al, Int Psychogeriatr 2000, 12, 49-65} \]

Calming music and/or hand massage

![Graph showing CMAI ratings before, during, and after treatments.]

Remington, Nursing Research, 2002
Systematic review of RCTs for agitation

- Person-centred care, communication skills training and adapted dementia care mapping ↓ symptomatic and severe agitation in care homes immediately (SES 0.3–1.8) and for ≤ 6 months afterwards (SES 0.2–2.2).
- Activities & music therapy (SES 0.5–0.6) ↓ overall agitation and
- sensory intervention ↓ clinically signif. agitation immediately.
- Aromatherapy and light therapy - no efficacy.

Livingston G et al Brit J Psychiatry 2014; 205, 436–442

Novel strategies

- Humour therapy
- Volunteers
- Music, singing, dance therapy
- Integrating kindergarten/ babies

Humor therapy: SMILE study

- 20% reduction in agitation
- Effect size = antipsychotic medications for agitation
- Adjusting for dose of humour therapy
  - Decreased depression
  - Improved quality of life

Low LF et al BMJ Open 2013
Brodaty et al Am J Ger Psych 2014
Low LF et al JAMDA 2014
Key elements

- Engagement
- Understanding
- Time

Barriers

- Time
- Money
- Staff
- Attitudes
- Training

Prevention of BPSD

- Person centred care and environment
- Right level of stimulation
- Attention to environment
- Treat physical disorders quickly
- Staff training, staff attitudes
  - Top down, bottom up
- Ready information for staff and carers
Clinical conclusions about management of BPSD

“Dr, Mrs Smith-Jones is hitting the nurses, disrupting the other residents and being impossible. Can you prescribe something?”

Clinical practice 1

- Ask nurses to monitor behaviours – what, when, what happens before, during and after?
- How often, when, what are precipitants?
- Exclude pain, UTI
- Determine cause
- Correct reversible factors eg stimulation level
- Start with psychological & environmental intervention(s)
  - except if urgent or sometimes concurrent
  - informed consent

II: Understand the person - Don’t just label the behaviour

- Why is this person behaving this way now?
- Aetiological map → management plan
- Different approaches often together
- Be creative
- Document
- Monitor outcome
- Partnership with family/ carers
Clinical practice 2

- No cause can be found or correctable
- Try psychosocial treatments
  - not sure how?
  - BPSD Guide on your app
  - call DBMAS or local psychogeriatric team
- Psychosocial treatment fail
- Consider pharmacological treatment
- 1st need informed consent from patient or proxy (Person Responsible, Guardianship Act)
- Start low and go slow

Rx for BPSD - summary

- Cholinesterase inhibitors – for apathy
- Memantine - ?benefit for agitation/aggression/ delusions/ hallucinations
- Antidepressants – citalopram, sertraline, venlafaxine, mirtazapine
- Risperidone 0.5 - 2mg/day; modal = 1mg
- Olanzapine 5mg/day, up to 10mg/day
- Carbamazepine, valproate – titrate dose against response, SEs and blood level
- Analgesic stepped approach

Prescribing & Deprescribing Psychotropics

- Review regularly
  - At least after 3 months
  - Trial reduction, monitor behaviours
- Resident arrived from hospital on psychotropics
  - Find out why
  - If primary psychiatric diagnosis eg Sz, BAD
    - seek psychiatric review
  - If not, trial reduction after pt. settled
The HALT study
Halting Antipsychotic use in Long-Term care

Funded by ACSI&HAG

HALT Study
• Train nurses in BPSD Management first
• Consent from NH, Family, GP before enrol
• 25 NHs – recruitment was challenge
• Approaching 150 residents enrolled
  – Families often reluctant
  – GPs often resistant
  – NHs apprehensive
• Positive stories – I have my wife back!
• Represcribing occurs

When everything fails?
• You do everything right but BPSD continues
• Risk to other residents/staff/family
• Special care units
  – Medium term → transfer back to mainstream
• Intensive care unit for very aggressive/violent

Brodaty H, Draper B and Low LF Medical Journal of Australia 2003
Summary ... d’oh!

D’oh!

- Drug treatments limited benefit and → side effects – yet ≈30% of residents in Australia are on antipsychotics and half on ≥1 psychotropic
- Most drug Rx given without required consent
- Psychosocial and environmental therapies beneficial with effect size ≥ drug Rx

Rendina N et al. IJGP, 2009

Summary ... d’oh!

D’oh!

- So why don’t NHs engage more?
- Why is the knowledge not being translated into practice?
  - Training – too little?
  - Cost – too much?
  - Time – not enough
  - “Not my job”!
  - Residents, families, system??

Ervin K Collegian (2014) 21:201—207

How to make good care Practice As Usual?

- Incentives for owners, managers, staff
- Accreditation standards
- Drive demand – families, residents
- Show cost effectiveness
- Publicise, communicate
- Leadership, training
Re-ablement, restorative care and perverse incentives

- Nursing homes are rewarded for more dependent residents
- Institutions make people dependent
- Restoring function reduces subsidies
- Feeling useful reduces BPSD?

Lee-Fay LOW

RACFs
Conclusions

- BPSD common
- Prevent BPSD PCC, environment, titrate stimulation, CG and staff training
- Drugs have limited effects and AEs
- Psychosocial treatments have ↑ evidence
- Problem is implementation
- Practical suggestions for working with facilities
- Need policy recognition too – accreditation standards, government policy, research support

Conclusions

- Pharmacotherapy
  - modestly effective for BPSD
  - Prescribe judiciously
  - Need medico-legal informed consent
  - Start low and go slow
  - Importance of deprescribing
  - Review regularly, at least 3 monthly
    - Trial reductions

Thank you

Dementia Collaborative Research Centre
www.dementiaresearch.org.au, &
Centre for Healthy Brain Ageing
www.cheba.unsw.edu.au
University of New South Wales (UNSW Australia)

h.brodaty@unsw.edu.au