Outcome of in-patient Treatment for Severe Motor Conversion Disorder - does it work?

A.S. David, R. McCormack
and Lishman Unit MDT
Evidence to date: inpatient rehab

- Inpatient multi-disciplinary intervention can result in positive outcome(s)
  - But evidence mainly case series
    - Ness (JNPT 2007), n=3
    - Watnabe et al (Arch Phys Med Rehabil 1998), n=4
    - Delargy et al (BMJ 1986), n=6
    - Withrington et al (Journal Bone Joint Surg 1985), n=3
    - Speed (Arch Phys Med Rehabil 1996), n=10

- One case-control (Czarnecki et al, 2012), n=60 cases
  - x1wk outpatient intensive rehab programme
    - Very crude outcome measure; mix of acute & chronic cases (median 17.5month duration ranging upwards from 1month)

- Shapiro & Teasell. BJPsych 2004. n=39,
  - Crossover. Good outcomes in chronic patients only with strategic behavioural approach vs. standard behavioural
Aims

- Audit (case-control comparison)
- Inpatient treatment
- Chronic severe motor conversion disorder (MCD)

Characteristics

Outcomes
- more specific than global improvement or cure
- Mobility, ADLs, objective scales where possible, length of stay
Methods

Records of all patients discharged from the Lishman 2007-2011 screened.

Inclusion

- Cases
  - diagnosis of MCD after multi-disciplinary agreement & intervention
  - Mixed dissociative not excluded
  - In those with somatoform pain, only those with clear independent motor symptoms included

- Controls
  - All-cause brain injury, next admission age/sex within 5 years
Main Outcome Measures

- **MOBILITY**
  - ‘walking unaided’, ‘walking with aids’, ‘wheelchair or bedbound’

- **ADLs**
  - ‘largely independent’, ‘somewhat dependent’, ‘mostly/fully dependent’.

- **Modified Rankin Scale** (0 *no sx* – 6 *death*) scores
  - assigned for admission and discharge
Data Analysis

Cases & controls compared on characteristics

Within-group analysis on outcomes
  – Did cases significantly improve?
  – Did controls significantly improve?

Regression analysis done to identify predictors of outcomes
RESEARCH PAPER

Specialist inpatient treatment for severe motor conversion disorder: a retrospective comparative study

Ruaidhri McCormack,¹ ² John Moriarty,³ John D Mellers,³ Paul Shotbolt,³ Rosa Pastena,³ Nadine Landes,³ Laura Goldstein,⁴ Simon Fleminger,⁵ Anthony S David²
Results

- 33 cases, 33 controls
- Case mean age 40.8yrs (±12.1, range 20-59); p=0.3 vs control
- Both groups were 78.8% (n=26) female
- All cases saw a neurologist and had appropriate neurological investigations
- Median length of illness pre-admission
  - 48mths (IQR 19-72) for cases
  - 11mths (IQR 3-25) for controls
  - Significant difference p<0.001
- Informal admission
  - 97% cases vs. 79% controls
Results - characteristics

- CASES = 33
  - Motor function
    - Loss of = 88% / n=29
    - Abnormal = 12%
    - Bilateral symptoms = 64%
  - Co-morbidity
    - non-epileptic features = 55%
    - psychiatric co-morbidity = 61%
      - somatoform pain/somatisation
    - neurological disorder = 18%
    - History of MUS prior to onset of current condition = 33%
  - Child sexual abuse (13 cases vs. 0 controls); p<.001
  - Health/Social care professional (15 vs. 3); p=.002
Table 1: Patient Characteristics: case-control comparison.

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Controls</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants, n</td>
<td>33</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Co-morbid psychiatric diagnosis</td>
<td>19 (57.6)</td>
<td>Na</td>
<td></td>
</tr>
<tr>
<td>Positive psychiatric history, n(%)</td>
<td>27 (81.1)</td>
<td>11 (33.3)</td>
<td>15.9</td>
</tr>
<tr>
<td>Co-morbid chronic medical condition, n(%)</td>
<td>24 (72.7)</td>
<td>18 (54.6)</td>
<td>2.36</td>
</tr>
<tr>
<td>Hx child sexual abuse, n(%)</td>
<td>12 (36.4)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Hx child physical abuse, n(%)</td>
<td>9 (27.3)</td>
<td>1 (3.03)</td>
<td>0.013*</td>
</tr>
<tr>
<td>Hx adult sexual/physical abuse, n(%)</td>
<td>11 (33.3)</td>
<td>2 (6.06)</td>
<td>0.011*</td>
</tr>
<tr>
<td>Hx health/social-care professional, n(%)</td>
<td>15 (45.5)</td>
<td>3 (9.09)</td>
<td>0.002*</td>
</tr>
<tr>
<td>Hx family carer, n(%)</td>
<td>4 (12.1)</td>
<td>1 (3.03)</td>
<td>0.355</td>
</tr>
<tr>
<td>Employed pre-morbidly, n(%)</td>
<td>23 (69.7)</td>
<td>27 (81.8)</td>
<td>1.92</td>
</tr>
</tbody>
</table>
Results - continued

CASES:
MCD has caused marked levels of new functional impairment

- 60.6% (n=20) wheelchair or bedbound
- 42.4% (n=14) dependent for ADLs
- Mean MRS 3.64 (±0.86) - sign higher than Cs at 2.97; p=0.003.
Outcomes

CASES = good outcomes

- Mobility: 73% (n=24) walking independently or improved
- ADLs: 86% (n=29) independent or improved
- MRS score: 73% improved
  - Significant improvement admission (mean 3.64, range 2-5, s.d. 0.86) to discharge (mean 2.82, range 2-5, s.d. 0.85); p<0.001.
Outcome: Mobility

Method of ambulation

- Bed-bound
- Wheelchair
- Walking aided by frame
- Walking aided by stick/crutches
- Walking unaided with some difficulties
- Walking unaided

Pre-admission vs On discharge
Outcome: ADLs

Independence with ADLs

- Mostly/fully dependent (%): Pre-admission 18.2, On discharge 3.03
- Somewhat dependent (%): Pre-admission 24.2, On discharge 18.2
- Largely independent (%): Pre-admission 57.6, On discharge 78.8
Cases

Table 2: Mobility & ADLs – admission to discharge within-group analysis

<table>
<thead>
<tr>
<th>CASES</th>
<th>Mobility</th>
<th>ADM % (n)</th>
<th>DIS % (n)</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ADM</td>
<td>DIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CASES</td>
<td></td>
<td>% (n)</td>
<td>% (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobilities</td>
<td>Walking unaided</td>
<td>15.2 (5)</td>
<td>42.4 (14)</td>
<td>3.473</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Walking aided</td>
<td>24.2 (8)</td>
<td>39.4 (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wheelchair/bed-bound</td>
<td>60.6 (20)</td>
<td>18.2 (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADLs</td>
<td>Largely independent</td>
<td>57.6 (19)</td>
<td>78.8 (26)</td>
<td>1.967</td>
<td>0.049*</td>
</tr>
<tr>
<td></td>
<td>Somewhat dependent</td>
<td>21.2 (7)</td>
<td>15.2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mostly/fully dependent</td>
<td>21.2 (7)</td>
<td>6.06 (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant improvement in MRS from admission (mean 3.64, s.d. 0.86, range 2-5) to discharge (mean 2.82, s.d. 0.85, range 2-5); p<0.001.
Controls

Table 2: Mobility & ADLs – admission to discharge within-group analysis

<table>
<thead>
<tr>
<th>CONTROLS</th>
<th>Mobility</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Walking unaided</td>
<td>75.8 (25)</td>
<td>78.8 (26)</td>
<td>0.394</td>
<td>0.693</td>
</tr>
<tr>
<td></td>
<td>Walking aided</td>
<td>12.1 (4)</td>
<td>15.2 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wheelchair/bed-bound</td>
<td>12.1 (4)</td>
<td>6.06 (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Largely independent</td>
<td>30.3 (10)</td>
<td>39.4 (13)</td>
<td>0.722</td>
<td>0.470</td>
</tr>
<tr>
<td></td>
<td>Somewhat dependent</td>
<td>30.3 (10)</td>
<td>27.3 (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mostly/fully dependent</td>
<td>39.4 (13)</td>
<td>33.3 (11)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No significant improvement in MRS from admission (mean 2.97, range 1-5, s.d. 0.92) to discharge (mean 2.85, range 1-5, s.d. 0.94); p=0.598.
Outcome - others

- Home-care
  - cases 90.9% (n=30) to 100% (n=33); p=0.238
  - controls 21.2% (n=7) to 54.6% (n=18); $\chi^2 7.79, p =0.005$

- Length of stay
  - Cases: 101 days (IQR 84-130)
  - Controls: 156 days (IQR 75-206)

- Couldn’t use - HoNOS 20/33, CORE 11/33, WSAS 12/33
Predictors

- No predictors – mobility / MRS

- Being in a nursing home or hospital pre-admission
  - Poor ADL outcome (HR 28, 95% CI 1.7-459, p=0.02)
    - but not independent

- Non-epileptic features
  - Increased length of stay (HR 5.5, 95% CI 1.2-25, p=0.03).
  - More significant (HR 9.1, 95% CI 1.45-56, p=0.02) when adjusted for clinical confounders
Predictors of Outcomes - *other studies*

- Few predictors consistently replicated

<table>
<thead>
<tr>
<th>Positive Outcome</th>
<th>Negative Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Co-morbid Axis 1 disorder</td>
<td>- Duration of symptom</td>
</tr>
<tr>
<td>- Sudden onset of symptoms</td>
<td>- Co-morbid PD</td>
</tr>
<tr>
<td>- Male</td>
<td>- On Benefits</td>
</tr>
<tr>
<td>- Change in marital status during follow-up</td>
<td>- <strong>Negative future expectations</strong></td>
</tr>
<tr>
<td></td>
<td>- Medical co-morbidity</td>
</tr>
<tr>
<td></td>
<td>- Higher axis V function</td>
</tr>
<tr>
<td></td>
<td>- Higher age of onset</td>
</tr>
<tr>
<td></td>
<td>- Non-attribution of symptoms to psychological cause</td>
</tr>
</tbody>
</table>
Conclusions

- Cases – improved ADLs, mobility, and MRS score.

- Inpatient admission to a specialist neuropsychiatry unit seems to work for chronic, severe MCD.

- Cases have higher rates of all types of abuse, particularly CSA
- Cases more likely to have worked as health/social-care professional & have a psychiatric history
- Non-epileptic co-morbidity increases length of stay
Limitations

- Retrospective & observational
  - Couprie et al. have shown that improvement over the course of inpatient admission is predictive of later outcome (risk ratio 3.2, 95% CI 1.8-5.6)

- Generalisability limited
  - selection of severe cases and in-patient facility

- Key elements of the treatment package

- Need for RCT
Future Directions

- Need for a Randomised controlled trial
  - ?OP Physiotherapy
  - In patient treatment

- Need better figures on:
  - incidence/prevalence
  - treatment pathways

- Grant from Maudsley Charity
  - with Simon Wessely, Matt Hotopf, Trudi Chalder, Mark Ashworth, Eanna O'leary, Nicola O’Connell