

# Multi-disciplinary in-patient care for Severe Motor Conversion - does it work?

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# 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 5years

# 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*s – 6 *death*) scores

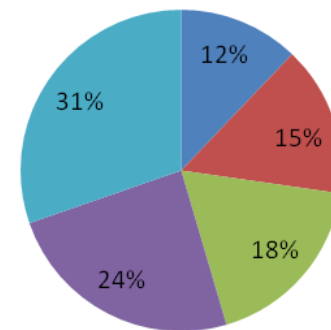
- assigned for admission and discharge

# Results

- 33 cases, 33 controls
- Case mean age 40.8yrs ( $\pm 12.1$ , 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

Motor Conversions per year

■ 2007 ■ 2008 ■ 2009 ■ 2010 ■ 2011



# 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.

	Cases	Controls	Test Statistics	
			X <sup>2</sup>	p
Participants, n	33	33		
Co-morbid psychiatric diagnosis	19 (57.6)	Na		
Positive psychiatric history, n(%)	27 (81.1)	11 (33.3)	15.9	<0.001*
Co-morbid chronic medical condition, n(%)	24 (72.7)	18 (54.6)	2.36	0.125
Hx child sexual abuse, n(%)	12 (36.4)	0 (0)		<0.001 <sup>a*</sup>
Hx child physical abuse, n(%)	9 (27.3)	1 (3.03)		0.013 <sup>a*</sup>
Hx adult sexual/physical abuse, n(%)	11 (33.3)	2 (6.06)		0.011 <sup>a*</sup>
Hx health/social-care professional, n(%)	15 (45.5)	3 (9.09)		0.002 <sup>a*</sup>
Hx family carer, n(%)	4 (12.1)	1 (3.03)		0.355 <sup>a</sup>
Employed pre-morbidly, n(%)	23 (69.7)	27 (81.8)	1.92	0.383

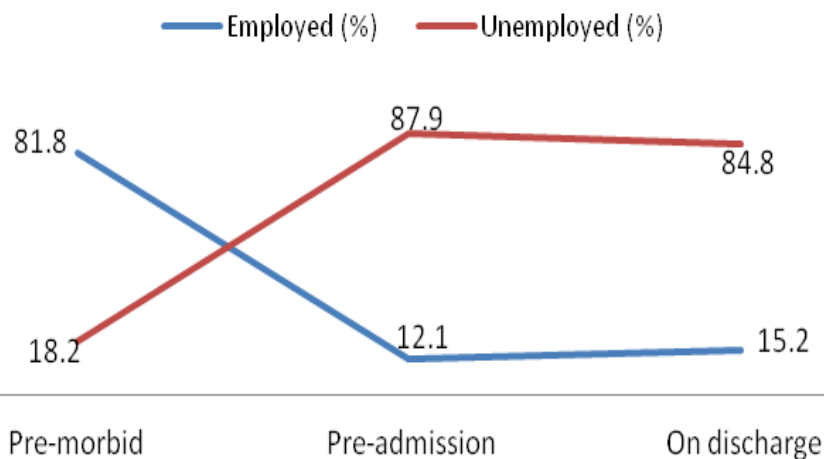


# Results - *continued*

## CASES:

MCD has caused marked levels of new functional impairment

### Employment Status



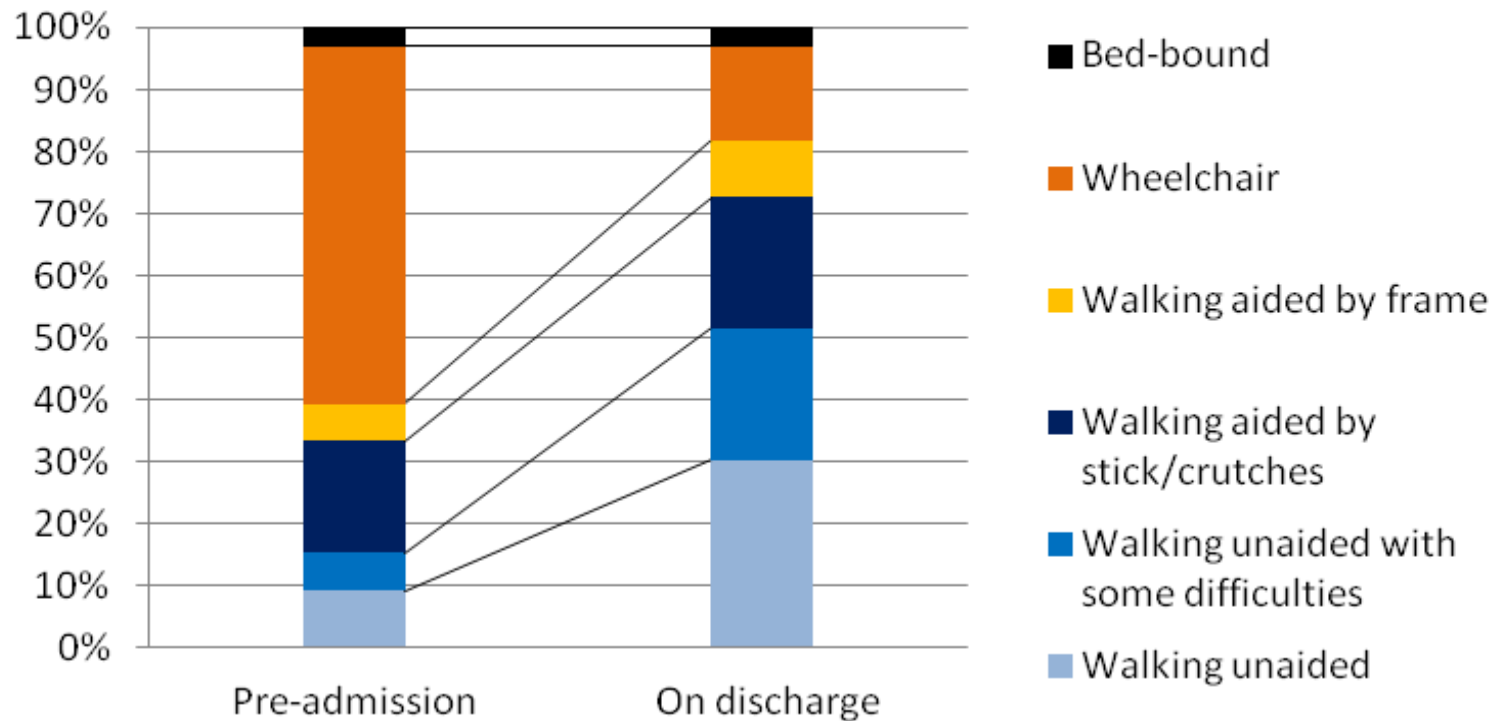
- 60.6% (n=20) wheelchair or bedbound
- 42.4% (n=14) dependent for ADLs
- Mean MRS 3.64 ( $\pm 0.86$ ) - sign higher than Cs at 2.97;  $p=0.003$ .

# 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);  $p < 0.001$ .

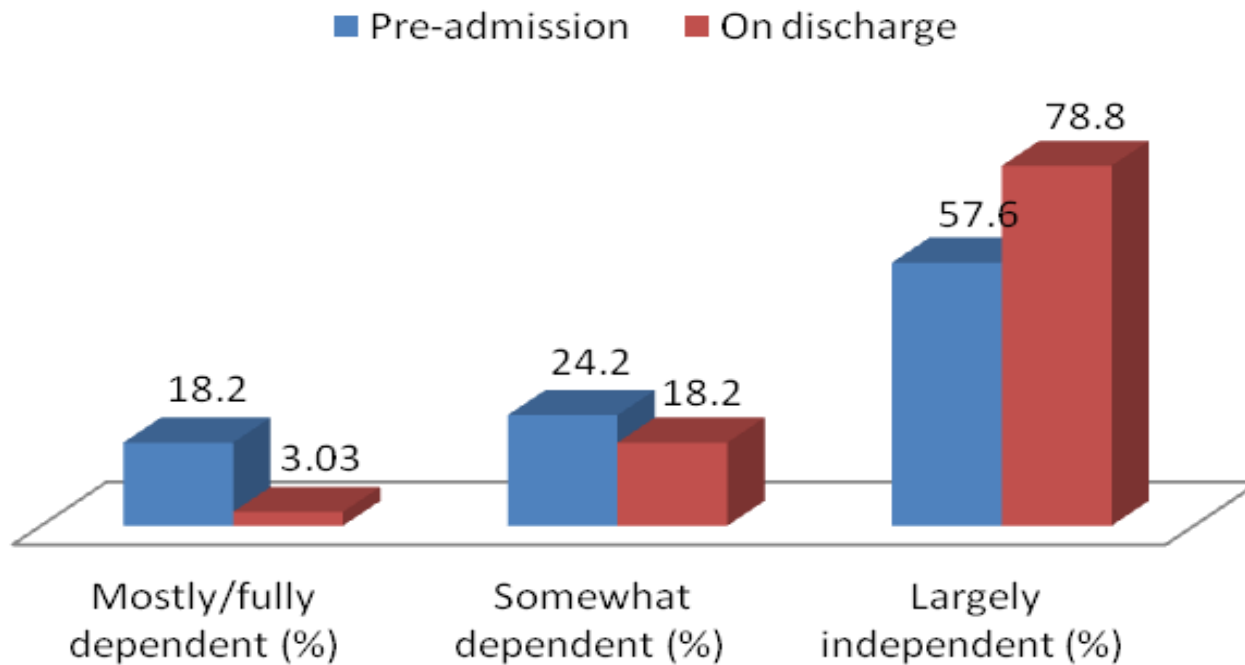
# Outcome: *Mobility*

## Method of ambulation



# Outcome: ADLs

## Independence with ADLs



# Cases

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

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

**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

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

**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: 101days (IQR 84-130)
- Controls: 156days (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

Positive Outcome	Negative Outcome
<ul style="list-style-type: none"><li>- Co-morbid Axis 1 disorder</li><li>- Sudden onset of symptoms</li><li>- Male</li><li>- Change in marital status during follow-up</li></ul>	<ul style="list-style-type: none"><li>- Duration of symptom</li><li>- Co-morbid PD</li><li>- On Benefits</li><li>- Negative future expectations</li><li>- Medical co-morbidity</li><li>- Higher axis V function</li><li>- Higher age of onset</li><li>- Non-attribution of symptoms to psychological cause</li></ul>

# 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