Long-term Prognosis of Patients with Psychogenic Movement Disorders

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Abstract

This study was conducted to assess the long-term prognosis of patients with psychogenic movement disorders (PMD), and to determine prognostic indicators. Patients seen in our Movement Disorders Clinic between 1988 and 2002 with the diagnosis of PMD were sent letters and later contacted by phone. Structured telephone interview, designed to assess motor and psychological function, was administered to all patients who gave verbal consent. Data from the telephone interview and chart review was included for this analysis. Out of 12,625 patients seen in our movement disorders clinic between 1988–2002, 517 patients (4.1%) were given a diagnosis of PMD. Their predominant movement disorders were categorized as follows: 211 (40.8%) tremor, 208 (40.2%) dystonia, 88 (17.0%) myoclonus, 22 (4.3%) tics, 20 (3.9%) gait disorder, 16 (3.1%) parkinsonism, 7 (1.4%) dyskinesia, and 3 (0.6%) chorea; 38 patients had more than one movement disorder. Of the 517 patients 228 (44.1%), 166 (72.8%) women, had evaluable data and were included in this analysis. The mean age of our study population was 42.3 ± 14.3, mean duration of symptoms was 4.7 ± 8.1, and mean duration of follow up was 3.4 ± 2.8 years. Symptoms improved in 56.6% of patients, while 22.1% were worse, and 21.3% remained the same at the time of follow up. Logistic modeling suggests that poorer outcome was predicted reliably by a factor of 2.9 for those exhibiting inconsistent PMD movements, 5.3 for those with a positive history of smoking, 1.1 for every year of duration of PMD symptoms, and 4.9 for those reporting satisfactory social life perceptions. In this largest, longitudinal study of patients with PMD the following contributed to a favorable outcome: good physical health, positive social life perceptions, patient's perception of effective treatment by the physician, elimination of stressors, and treatment with a specific effective medication.

Study Objective

1. To study the long term prognosis of Psychogenic Movement Disorders (PMD)
2. To characterize various PMD seen in the movement disorders clinic
3. Predict good prognostic indicators for PMD based on logistic regression analysis

Methods

1. Patients with a diagnosis of PMD seen in the Baylor College of Medicine Movement Disorders Clinic between 1988–2002 were initially included in this study.
2. As a first step letters requesting participation in a telephone survey and an update on contact information were sent to 517 patients who were diagnosed with PMD. Of these we have received 25 responses with 4 returned without a valid address. Attempts were then made to locate patients using white pages, internet people search engines, as well as telephone operator assistance. Only those with a valid telephone number and address were included in this study.
3. Once the patients were contacted data was collected using a structured telephone interview and retrospective chart review. Once patient refused an interview, this response was recorded, and all available data from the chart was included.
4. Attempts were made to verify retrospectively whether the patients satisfied the Fahn and Williams criteria [Ref 1] for PMD.
5. Statistical analysis was performed using chi-square, and spearman's rho on ordinal and nominal variables, ANOVA was performed for continuous variables.
6. Given the retrospective nature of examining the long-term outcome of patients with PMD, stepwise logistic regression modeling is appropriate as the inclusion or removal of predictors of outcome is based solely on statistical criteria. Furthermore, the backwards approach initially evaluates the set of all predictors, and subsequently, the least significant predictors are eliminated at each step of the logistic model until all included predictors are statistically significant at the $\alpha = 0.05$ level. All analyses were carried out using SPSS v11.0.1.

Table 1. Summary of PMD Database (includes information from the telephone survey and chart review)

1. Demographic information
2. List of medical, psychiatric, and neurological problems both for the patient and family.
3. Details of PMD (Including the detailed characteristics of each movement disorder)
4. Other non-organic neurological conditions
5. Other non-organic somatic complaints
6. Precipitating event prior to onset
7. Multiple somatizations
8. Secondary gain
9. Social history including personal history of smoking, alcohol, or any form of physical, emotional or sexual abuse.
10. Mc Masters Health Index Questionnaire [Ref 2, 3]
11. Features of PMD as documented in chart:
    - Inconsistent movements
    - Incongruous movements
    - Distractibility
    - Entrainment
    - Suppressibility
    - Deliberate slowing
    - Rhythmical shaking
    - La belle indifference
    - Bizarre gait
    - Variable frequency and amplitude
    - Other features pertaining to each individual
    - psychogenic movement disorder
12. Fahn and Williams Criteria for PMD
13. Response to placebo
14. Course of movement disorder including global outcome

Table 2. Demographic Information

	n [N]	%
Number of patients (1988–2002)	[12625]	
Patients with PMD diagnosis	517	4.1
Patients included in this FU study	[228]	
Male	62	27.2
Female	166	72.8✱
Initial visit, years ^	[228]	
Age	42.3	(14.3)
Duration of symptoms	3.4	(2.8)
Marital status	[211]	
Married	132	62.6
Never married	55	26.1
Divorced	17	1.9
Widowed	3	1.4
Employment status	[226]	
Employed	75	33.2
On disability	68	30.1
Student	26	1.5
Homemaker	17	7.5
Retired	15	6.6
Choose not to work	10	4.4
Unemployed	9	4.0
Litigation	3	1.3
Medically retired	2	0.9
Sick leave	1	0.4
Occuation	[225]	
Health-related	30	13.3

^Mean (SD); ✱$p < 0.0001$

Table 3. PMD Information

	n [N]	%
Diagnostic criteria	[228]	
Clinically established	136	59.6✱
Probable	44	19.3
Documented	32	14.0
Possible	16	7.0
PMD Diagnosis	[228]	
Tremor	127	55.7
Dystonia	89	39.0
Myoclonus	30	13.2
Tics	15	6.6
Gait disorder	7	3.1
Parkinsonism	6	2.6
Dyskinesia	1	0.4
PMD onset	[226]	
Abrupt	187	82.7✱
Gradual	39	17.3
Precipitating event	[227]	
Personal life stress	76	33.5
Trauma	65	28.6
Surgery	19	8.4
Major illness	18	7.9
Reaction to medical treatment/procedure	17	7.5
Secondary gain	[227]	
Disability	50	22.0
Compensation pending	20	8.8
Litigation	20	8.8
Relationship	7	3.1
Specific clinical features of PMD	[228]	
None	3	1.3
Distractibility	148	64.9
Variable amplitude & frequency	107	46.9
Intermittent or episodic	90	39.5
Inconsistent movements	68	29.8
Bizarre gait (astasia-abasia)	50	21.9
Incongruous movements	33	14.5
Active resistance to passive movement	29	12.7
Give-way weakness	28	12.3
Variable direction	28	12.3
Labelle indifference	24	10.5
Suppressible	24	10.5
Non-patterned	22	9.6
Deliberate slowing	18	7.9
Suggestible	18	7.9
Preserved function with PMD	16	7.0
Irregular tremor	15	6.6
Sensory split	15	6.6
Entrainment	11	4.8
Rhythmical shaking	11	4.8
Cautious gait	10	4.4
Fixed posture	10	4.4

✱$p < 0.0001$

Table 4. Comorbid Conditions and Somatizations

	n [N]	%
Psychiatric	[228]	
None	85	37.3
Depression	118	51.8
Anxiety	50	21.9
Suicidal ideation	16	7.0
Anger	12	5.3
Panic attacks	8	3.5
Neurological	[228]	
None	52	22.8
Organic neurological disease	70	30.7
Numbness or sensory	69	30.3
Pain	59	25.9
Weakness	37	16.2
Visual problems	36	15.8
Muscle spasm	24	10.5
Fibromyalgia	18	7.9
Seizures	17	7.5
Speech problems	[227]	
None	156	68.7
Stuttering	28	12.3
Dysarthria	21	9.3
Word finding difficulties	13	5.7
Vocalization	10	4.4
Loss of speech	8	3.5
Somatizations	[228]	
None	42	18.4
Pain syndrome	107	46.9
Headache	94	41.2
Fatigue	93	40.8
Insomnia	77	33.8
Memory loss	70	30.7
Exhaustion	69	30.3
Dizziness	62	27.2
Sexual dysfunction	25	11.0
Self-inflicted injuries	21	9.2

Table 5. Treatment

	n [N]	%
Treatment history		
Physician	[228]	
Internist/Family practitioner	209	91.7
Neurology	171	75.0
Psychiatry	49	21.5
Movement disorder	12	5.3
Pain specialist	11	4.8
Neurosurgeon	11	4.8
Therapist	[227]	
Physical therapy	17	7.5
Chiropractor	14	6.2
Psychotherapy	13	5.7
Biofeedback	9	4.0
Neuropsychologist	8	3.5
Treatment offered	[228]	
None	5	2.2
Medication (added)	177	77.6
Placebo (n = 41)		
Positive	38	92.7
Negative	3	7.3
Biofeedback/relaxation	96	42.1
Psychology	38	16.7
Psychiatry	34	14.9
Physical therapy	12	5.3

Table 6. Long-term Outcome

	n [N]	%
Social life	[96]	
Good	46	47.9
Poor	33	34.4
Satisfactory	17	17.7
Physical health	[97]	
Good	39	40.2
Satisfactory	30	30.9
Poor	28	28.9
Global outcome	[122]	
Better	69	56.6✱
Worse	27	22.1
Same	26	21.3
Reasons for improvement	[113]	
Did not improve	49	43.4
Perceived effective treatment by physician	36	31.9
Elimination of stressor	11	9.7
Use of specific medication	7	6.2
Stress management	4	3.5
Biofeedback	3	2.7
Psychotherapy	3	2.7
Lost to follow-up	[228]	
Refused interview	75	32.9
No response	48	21.1
Dissatisfaction	41	18.0
Seeing some other physician	36	15.8

✱$p < 0.0001$

Table 7. Logistic Regression Analysis

Predictor Variable	β	Wald statistic	p	Odds ratio	95% CI
Social life perceptions — Satisfactory	1.59	5.43	0.020	4.90	(1.29 , 18.67)
Poor	0.98	2.78	0.095 ^	2.66	(0.84 , 8.37)
Longer duration of PMD symptoms	0.07	4.37	0.037	1.07	(1.00 , 1.14)
Positive history of smoking	1.68	7.88	0.005	5.35	(1.66 , 17.28)
Presence of inconsistent PMD movements	1.06	3.87	0.049	2.88	(1.00 , 8.28)

^ Not a reliable predictor of same/worse outcome.

Table 8. Spearman Rho Correlational Analysis

Variables	ρ	p
Smoking vs Weaker physical health	0.25	< 0.02
Smoking vs Negative social life	0.32	< 0.001
Positive social life perception vs Better McMaster Health index	-0.45	< 0.0001
Younger age at onset vs stronger physical health	0.24	< 0.02
Gradual onset vs Longer duration	0.40	< 0.0001
Smoking vs Poorer outcome	0.29	< 0.002
Better outcome vs Shorter duration	0.23	< 0.02
Stronger physical health vs Better outcome	0.24	< 0.02
Positive social life vs Better outcome	0.27	< 0.007

Table 9. Organic Movement Disorders with PMD

	n [N]	%
Organic movement disorder	[37]	
Tremor	19	51.4
Focal	16	43.2
Gait disorder	18	48.6
Dystonia	11	29.7
Focal	7	18.9
Myoclonus	4	10.8
Parkinsonism	3	8.1
Tics	2	5.4
Dyskinesia	0	0.0
Chorea	0	0.0

Key References

1. Fahn S, Williams DT. Psychogenic dystonia. Adv Neurol.1988; 50: 431-455.
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3. Chambers LW, MacDonald LA, Tugwell P et al. The McMaster Health Index Questionnaire as a measurement of quality of life for patients with Rheumatoid disease. J Rheumatol 1982; 9: 780-784.
4. Thomas M, Jankovic J. Psychogenic movement disorders: Diagnosis and management. CNS Drugs 2004;18:437-52.

Conclusions

1. An assessment of outcome was possible in 53.5% of those who were able to contact.
2. Based on logistic regression analysis, poor prognostic indicators for PMD include presence of inconsistent movements, suggestibility, and dissatisfaction with the physician, positive history of smoking and long duration of illness.
3. Litigation, disability, dependence on spouse or caretaker were not significant prognostic factors based on logistic regression analysis.
4. Good prognosis was associated with patient's perception of receiving effective treatment by physician, attribution of a specific medication, good physical health, positive social life perception, higher score on McMaster's Health Index, elimination of stressor, and co-morbid anxiety disorder.

Although our results are consistent with previously reported series [4], this series represents the largest population of patients with PMD followed for the longest period of time