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PREDICTORS OF OUTCOME OF PHYSIOTHERAPY TREATMENT FOR FEMALE STRESS URINARY INCONTINENCE

Hypothesis / aims of study

The 3rd International Consultation on Incontinence (2005) concluded: "It is not clear whether there are any reliable predictors of pelvic floor muscle training outcome. Too few studies have appropriately investigated the association between patient characteristics and outcome to be sure" [1].

The aim of this study was to investigate the predictors of outcome of physiotherapy treatment of stress urinary incontinence in women based on a population-based multicentre observational study.

Study design, materials and methods

A prospective observational study design was used to investigate the physiotherapy treatment outcomes of 274 adult women with a clinical or urodynamic diagnosis of stress urinary incontinence. Subjective, objective and quality of life outcomes were measured at the end of treatment and one year later, using valid and reliable tools. Compliance with the treatment was investigated during the treatment phase and at one year follow-up.

Treatment was a 'physiotherapy management program' which consisted primarily of pelvic floor muscle training, but could include adjunctive therapies such as biofeedback and electrical stimulation. The content of this package and the length of treatment were the responsibility of the treating physiotherapist, and were based on a clinically reasoned process. All data collection protocols were standardised. The results of this study have been previously reported [2, 3].

Baseline demographic data, exercise compliance and treatment variables were analysed for each of the outcome variables in univariate analysis to identify significant factors predicting outcome both at the end of episode and at one year follow-up. Significant end of episode predictive factors were then entered into a forward stepwise regression to determine multivariate models.

Results

At the end of treatment episode, 'good or excellent compliance with treatment' as rated by the physiotherapist was identified as the key independent predictor for improvement in outcome across all outcome variables. Older age (>50 years) and shorter symptom duration (<1 year) were also identified as independent predictors of improved outcome (Table 1).

In the multivariate analysis, good/excellent compliance, older age, greater baseline severity of urine loss on stress testing, shorter duration of symptoms and no history of heavy lifting were retained as significant predictors of fewer leakage episodes per week with an adjusted OR 2.7 (95% CI 1.7-4.3). Good/excellent compliance, older age, greater baseline severity of urine loss on stress testing and no history of lifting together predicted a greater likelihood of having a better outcome on stress testing (AOR 2.8, 95%CI 1.9-4.2). Good/excellent compliance, older age, shorter duration of symptoms, no constipation and no babies >4kg were significant multivariate predictors of improved quality of life outcome at the end treatment episode (AOR 2.7, 95% CI 1.7-4.5).

At follow-up one year after discharge from treatment, compliance with the pelvic floor exercise program '*as prescribed by the physiotherapist'* predicted a greater likelihood of being satisfied with the outcome (OR 3.1, 95%CI 1.4-7.1) and doing the home exercises *'but less often than prescribed'* predicted greater chance of subjective 'cure' or 'improvement' (OR 3.7, 95%CI 1.3-10.8). Younger age (<50 years) was a predictor of improved outcome at one year (Table 2).

Table 1. Summary of univariate analysis with key significant predictors of outcome at end of episode

	IEF		Stress test		QoL		Incontinence Impact	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Good/excellent compliance	3.6	2.1-6.3	3.2	1.9-5.4	4.1	2.2-7.4	2.5	1.1-5.8
Age <50 yrs	0.4	0.2-0.7	0.4	0.2-0.7	0.5	0.3-0.9		
Symptom duration <1 yr	1.9	1.0-3.9			2.1	1.1-4.1		

IEF= incontinence episode frequency per week, Stress test = urine loss with provocative standardized test, QoL = quality of life (King's Health Questionnaire), OR = Odds Ratios, 95% CI = 95% Confidence Intervals

Table 2. Summary of univariate analysis with significant predictors of outcome one year after discharge from treatment

	Satisf-action with	Subject-tive cure	IEF	Incont. Impact

	outcome							
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
PFX as prescribed	3.1	1.4-7.1						
PFX but less often than prescribed			3.7	1.3-10.8				
Age <50 yrs					1.9	1.1-3.2	2.8	1.5-5.5
Symptom duration <1 yr	3.7	1.6-8.3					0.4	0.2-0.95

PFX = pelvic floor exercises, IEF = incontinence episode frequency per week, Incont. Impact = Incontinence Impact (King's Health Questionnaire), OR = Odds Ratio, 95%CI = 95% Confidence Intervals

Interpretation of results

These results suggest that compliance with the physiotherapy management program is the key predictor of improved outcome both at the end of treatment and a year later. Older women may have a greater chance of successful treatment outcome but the effect may not persist one year after treatment.

Concluding message

The results of this study provide novel and robust information about the predictors of physiotherapy treatment for women with stress urinary incontinence. Compliance with the training program was consistently identified as the key predictor of outcome. This suggests that clinicians should address patient compliance in order to improve treatment outcomes.

References

1. In *Incontinence. 3rd International Consultation on Incontinence.* Health Publications (2005)
2. *Australian & New Zealand Journal of Obstetrics & Gynaecology* (2005) 45:226-232.
3. *Australian & New Zealand Journal of Public Health (*2005) 29:416-421.

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