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Predictors of 6-month and 3-year outcomes after psychological intervention for psychogenic non epileptic seizures

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ABSTRACT

Purpose: To determine outcome and its predictors following psychological intervention in people with Psychogenic Non-Epileptic Seizures (PNES)
Methods: Prospective audit of 89 consecutive patients. PNES were recorded at baseline (initial psychology appointment), at 6 months and 3 years post the initial appointment. Six-month data was obtained by face-to-face interview, while 3-year data was obtained by contacting general practitioners and by postal survey.
Results: Eight patients had stopped having PNES at the first appointment and were discharged. At 6-month follow up 43/81 patients (53.1%) were free of seizures. Predictors of cessation of seizures were: patient employed (OR 4.48, $p = 0.004$), short waiting time for intervention (OR 0.94, $p = 0.018$), the patient feeling they had some control over the seizures (OR 3.30, $p = 0.021$), and an internal locus of control ((OR 7.46, $p = 0.001$). Outcomes at 3 years based on patient report were available in 32/81 patients (36%). 11/32 patients reported being free of seizures. 50/65 patients were not accessing any healthcare for seizures. There were no significant predictors of either outcome among the variables collected.
Conclusion: Just over half of our patients reported being free of seizures following intervention. Being employed predicted good outcome, but the best predictor of being seizure free at 6 months was having an internal locus of control. This may be useful practically and requires further study. No good predictors of long-term outcome were found, possibly because of loss to follow up

1. Introduction

There is relatively little published evidence to guide the use of therapeutic interventions in psychogenic non-epileptic seizures (PNES). Communication of the diagnosis may be associated with improvement or resolution in a proportion of cases [1,2,3,4]. There are no RCT data to support this as a therapeutic effect, but in many patients the PNES do stop in close temporal association with the conversation [4], making a causal relationship likely. There is some RCT evidence that withdrawal of AED improves healthcare utilisation, but no clear evidence that the PNES themselves are improved [5]. Psychological therapy of different kinds has been widely used [6], though positive RCT evidence for effectiveness has been limited to two relatively small trials, both of CBT approaches [7,8]. An RCT of antidepressant medication was negative [9]. One larger observational study of the results of brief augmented psychodynamic interpersonal therapy, found that 25% of 66 patients reported that they were free of PNES after 3.5 years [10].

One particular difficulty using RCT methodology in PNES is that a large initial patient population may yield only a small number of outcomes [5]. This is all the more problematic as PNES populations appear to be heterogeneous in terms of potential causal factors, psychological and medical background [11–14]. Psychotherapists and psychologists treating PNES may have a feeling for which patients might engage and improve. It may therefore be helpful to determine any such predictors and to explore factors on which they may be based. Determining predictors of outcome in observational studies may also be helpful in the subsequent design of RCTs and in interpretation of their data. We have therefore analysed the data from an audit of the results of a

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psychological intervention to determine which of a range of baseline variables might predict outcome.

2. Methods

All patients who were referred for psychological intervention to a specialist service for PNES during the year from 1st October 2008 and who attended their first appointment were included. All had a confirmed diagnosis of PNES, based on clinical evaluation, plus in all cases video EEG recording of events or ambulatory EEG recording of events with good clinical descriptions. The diagnosis was communicated in a semi-standardised way [15], and anticonvulsant medication was withdrawn where appropriate. All patients were referred for psychological intervention, with the exceptions of patients whose PNES had already ceased, patients who did not accept the diagnosis and patients who declined psychological intervention. Psychological intervention included an initial triage appointment with one of four clinical psychologists, where clinical information was gathered, a psychological formulation was generated. Patients were offered a maximum of 10 sessions. Therapeutic targets were identified and agreed with patients and one or more of a range of interventions were chosen (see Table 1). We extracted a range of potentially predictive variables from the case record and the psychologists' semi-standardised triage assessment.

One hundred and two patients were sent an appointment to see a psychologist, of whom 89 attended the triage appointment, and of whom 81 attended triage plus at least one further appointment. They included 72 women (80.9%). Their mean age was 38.7 (+15.6) years, and mean duration of PNES history was 6.2 (+7.49) years. Nine patients (10.1%) had additional epilepsy, 6 (6.7%) had mild learning disability, 58 (65.1%) had other health problems, 20 (22.5%) had past or present other medically unexplained symptoms other than PNES, 44 (54.3%) had a previous psychiatric diagnosis, and 70 (78.6%) reported antecedent psychological trauma (in 21 (25.9%) this was sexual or physical abuse). Reported seizure frequency ranged from 1 to 180 per month, mean 22.3 + 30.4. The average decile score obtained using the Scottish Index of Multiple Deprivation (http://www.scotland.gov.uk/Topics/Statistics/SIMD) was 3.5, with 56 patients in the first 4 deciles, indicating that our sample predominantly came from the lower half of the socio-economic scale.

Baseline variables were: demographic data, age at onset of PNES, duration of history, diagnostic delay, hospital anxiety and depression scale (HADS), patient agreement with diagnosis, whether the psychologist could formulate a problem and whether the patient agreed with the formulation. Our psychologists felt that they could predict success, so they agreed to record their predictions, and to record a series of factors that they felt influenced their prediction. These factors were: Whether the patient was employed or had a career, whether they felt their attacks could be helped, whether they felt they had a degree of control over their attacks, whether the patient had an internal locus of control, whether the patient lived with his or her family, whether the patient had other medically unexplained symptoms. We also recorded whether the patient had engaged with therapy, and whether the psychologist predicted good outcome. All these factors were elicited or estimated clinically by the psychologist and were recorded as binary measures.

Seizure outcomes at 6 months post triage were acquired at face to face interview with the neurologist. Patients reporting no seizures for two months were recorded as 'seizure free', this being the longest period we could practically use in the time frame of the follow up. Where patients did not attend this appointment, or had been discharged from treatment before 6 months and did not attend neurological review (44 patients), the last report was carried forward. All patients in Scotland are attached to a named family doctor, who acts as a central point for organising care and acts as a gateway to specialist services, and who receives reports from all secondary care presentations. From family doctors we requested data relating to presentation to medical services over 6 months for the year ending September 2012 (range 3–4 years post treatment, mean follow-up 3.2 years). At the same time we also sent out a short questionnaire that included a question on whether or not the patient considered him or herself free of PNES.

2.1. Statistical analysis

Statistical analysis was carried out using SPSS v21. The Chi squared test was used to evaluate between-groups differences. Simultaneous binary logistic regression (BLR) models were used to evaluate the ability of independent variables to predict outcomes. Exploratory bivariate analysis was carried out for each one. Independent variables correlating with outcome variables at the 10% level or less ($p = <0.1$) were considered for entry into the model. Where screening for co-linearity identified two independent variables correlating at the 30% level ($p = <0.3$) or less, the variable correlating less significantly with the dependent variable was eliminated. The remaining independent variables were entered into an initial model. Independent variables without significant predictive value at the 5% level ($p = <0.05$) were then eliminated, and final analysis carried out. Where the number of

Table 1
Protocol for psychological intervention in patients with PNES.

Triage:
Patient thoughts on diagnosis and potential treatment (locus of control, attributions, perceived responsibility for recovery)
Seizure occurrence, response to seizures (seizure description, frequency, hospital contact, medication)
Onset factors (home, work and life events in the months prior to onset)
Current circumstances (home, family, work, pastimes, social support)
Past history (other illness, traumatic events, long term life history)
Treatment:
Treatment approach was based on a psychological formulation developed with the patient. The broad outline of treatment covered: psychoeducation to patients and family to develop understanding of PNES and awareness of triggers—both external and internal; considering the context that may both prevent and perpetuate attacks and identifying the attack prodromal phase and how to take remedial action. While the models used were integrative and varied according to the formulation, intervention was predominantly delivered in a CBT framework; other approaches were used on a case by case basis (see below)
Session 1: assessment and formulation
Sessions 2–10: interventions are used according to treatment targets that emerge from formulation
1. When social factors predominate in cause and maintenance:
Family therapy
Interpersonal therapy
Social interventions
2. When internal thought processes/personal conscious behaviour predominate in cause and maintenance:
Cognitive behaviour therapy
Behavioural management advice
3. When internal conflicts such as grief or reaction to past trauma predominate in cause and maintenance:
Mindfulness and compassionate mind
Acceptance and commitment therapy
Counselling
Focused analytic therapy
Dialectical behaviour therapy
4. When physiological states, current health problems or habitual reactions to these problems predominate in cause and maintenance:
Psychological treatment for sleep dysregulation
Cognitive assessment remediation
Behavioural management advice