Clinical study

Favourable outcome without psychotherapy in patients with functional neurologic disorder

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Objective: To investigate whether patients with functional neurologic disorder (FND) may improve without psychotherapy as was suggested by a retrospective study.

Methods: We prospectively studied patients with newly diagnosed FND. At baseline and at 12 months participants filled out a set of self-reported health questionnaires. During the one-year follow up we recorded the use of psychotherapy.

Results: The study group consisted of 193 included participants. After 12 months 60 participants (60/193 = 31.1%) perceived a favourable outcome. Sixty participants (60/191 = 31.4%) were referred for psychotherapy. Multivariable logistic regression showed that participants with a high level of somatisation were less likely to have a favourable outcome (adjusted OR = 0.55; 95% CI: 0.29 to 1.04; p = 0.07). We could not demonstrate an independent significant impact of the use of psychotherapy on favourable outcome (adjusted OR = 0.65; 95% CI: 0.33 to 1.30; p = 0.22).

Conclusion: Our study confirms the results of the retrospective study. The association between a high level of somatisation and a less favourable outcome suggests that neurologists should pay more attention to symptoms other than the neurological, but this does not necessarily mean referral for a psychological intervention.

1. Introduction

A recently developed Dutch guideline (2017) for the management of patients with a functional neurologic disorder (FND) recommended to refer these patients to both a neurologist and psychiatrist or psychologist for diagnosis and treatment. This recommendation is not exceptional, for instance Nicholson and colleagues recently concluded that a thorough psychosocial evaluation is required in patients with FND [1]. However, many neurologists experience difficulties with referral of patients with FND to psychiatrists or psychologists as these patients perceive somatic symptoms and mostly therefore do not see the medical relevance of this referral.

Psychosocial evaluation is required before psychotherapy can begin, but is psychotherapy necessary in all patients with FND? Improvement without psychotherapy is possible even if symptoms exist for several months which was shown more than 20 years ago in a retrospective study from the Netherlands. In this study about 60% of the patients improved, none had been treated with any form of psychotherapy [2].

The aim of our study was to investigate in a cohort of patients with newly diagnosed FND whether we could confirm the results of the retrospective study by assessing the impact of using psychotherapy on patients’ perceived improvement.

2. Methods

2.1. Participants and setting

The participants of this study had been included between 2009 and 2013 in a single centre randomised controlled trial at the outpatient department of neurology of the Academic Medical Center (AMC), Amsterdam, the Netherlands [3]. The ethics committee of the AMC approved the study.

Patients and Public Involvement: patients were not involved in the design of the study.

For eligibility criteria see the method section of the trial [3]. In brief, the participants had been referred by general practitioners (GPs) to the outpatient department of neurology for diagnosis of the neurological symptoms. Participants were excluded when the...
duration of their functional symptoms was >1 year since the first consultation at the office of the GP.

All participants were encouraged to gradually increase their activities of daily life. If the progress in daily activities was considered too slow, the participants were referred to a physiotherapist. Referral for psychotherapy was left to the discretion of the neurologist or GP.

2.2. Data collection

During the participants’ baseline visits at the outpatient clinic, sociodemographic and clinical characteristics (sex, age, ethnicity, education level, and duration of symptoms) were registered. At baseline and at 12 months participants also filled out a set of self-reported health questionnaires, including the somatisation subscale of the Symptom Checklist (SCL-90) and the Hospital Anxiety and Depression Scale (HADS). Scores on the somatisation subscale were dichotomized into normal level and high level (≥29 points) [4,5]. Scores on the anxiety and depression subscales of the HADS were also categorised into normal and high level, based on a cut-off value of ≥11 points [6]. During the one-year follow up the use of psychotherapy was recorded.

2.3. Outcomes

During the study period the participants were masked for the treatment strategies. At 12 months participants scored their perceived symptoms compared with baseline into the following six categories: (1) no complaints anymore; (2) complaints have improved greatly; (3) complaints somewhat improved; (4) complaints have remained the same; (5) complaints have deteriorated a bit; and (6) complaints have deteriorated substantially. Since participants found it difficult to decide whether they had no complaints anymore or had improved greatly, we combined categories 1–2 as favourable outcome. Categories 3–6 were defined as a not-favourable outcome.

2.4. Statistical analysis

Since there were no differences between treatment arms with regard to participants’ baseline characteristics at entry of the study, the use of psychotherapy and a wide range of primary and secondary outcomes at 12 months [3], we combined the two treatment arms for this analysis.

Baseline characteristics and outcome parameters were summarized using descriptive statistics. The univariable associations between participants’ baseline characteristics and psychotherapy on the one hand and outcome on the other hand, were analysed using the Fisher’s exact test or the two group t-test, where appropriate. The impact of psychotherapy on outcome was additionally analysed using multivariable logistic regression, adjusting for baseline variables that in the univariable analyses were associated with a p value ≤0.10. Effect size was expressed in an adjusted odds ratio with its corresponding 95% confidence interval (CI). A two-sided p values <0.05 was considered statistically significant. All analyses were performed in IBM SPSS Statistics, version 22.

3. Results

The study group consisted of 193 included participants. After 12 months 60 participants (60/193 = 31.1%) perceived a favourable outcome in terms of having no complaints anymore or reported that their complaints had improved greatly compared to their baseline level at the start of the study. A total of 45 participants (45/193 = 23.3%) reported that their complaints had somewhat improved.

Sixty participants (60/191 = 31.4%) were referred for psychotherapy (Table 1). Of the participants with a favourable outcome 15 subjects (15/60 = 25%) had used psychotherapy; of the participants who had not a favourable outcome 45 subjects (45/131 = 34.4%) had received psychotherapy. Difference between these proportions was not statistically significant (p = 0.24; Table 1).

We could not demonstrate significant associations between participants’ baseline characteristics and outcome, although a trend (p = 0.06) was observed for somatisation: of the participants with a favourable outcome 21 subjects (21/60 = 35%) had a high baseline level of somatisation, whereas in the group without a favourable outcome 66 subjects (66/133 = 49.6%) had an elevated somatisation level.

Multivariable logistic regression, including somatisation level and psychotherapy into the model, showed an independent borderline effect of somatisation on outcome: participants with a high level of somatisation were less likely to have a favourable outcome compared to participants with a normal somatisation level (adjusted OR = 0.55; 95% CI: 0.29 to 1.04; p = 0.07). We could not demonstrate an independent significant impact of the use of psychotherapy on favourable outcome (adjusted OR = 0.65; 95% CI: 0.33 to 1.30; p = 0.22).

4. Discussion

In this study 54% of the participants with FND improved during the 12-months follow-up: they had reported not to have complaints anymore or their complaints had improved greatly or had somewhat improved. Since participants of this study found it difficult to decide whether they had no complaints or had improved greatly, we combined these two categories as favourable outcome, which is the best possible outcome that can unlikely further be improved. Of all participants 31% had such a favourable outcome.

Referral for psychotherapy was left to the discretion of the neurologist or general physician which occurred in a minority (31%) of the participants. These referrals were usually carried out in subjects who had not or slowly improved several months after the diagnosis had been clarified. This probably explains why psychotherapy was inversely associated, albeit not statistical significant, with a favourable outcome. Our study confirms the results of the retrospective study which showed that patients may improve without a psychological intervention [2]. In our study this turned out to be the case in three-quarters of the subjects who improved. This perceived improvement without psychotherapy could not be explained by short duration of symptoms. Patients may have functional symptoms for only a few weeks too short to start psychotherapy, but in this study 68% of the patients had symptoms for at least six months. Therefore even if symptoms exist for half a year improvement without psychotherapy is possible.

Can patients who will have a favourable outcome be identified? If this is possible these patients need not to be referred to a psychologist or psychiatrist. Of the several baseline characteristics only one tended to be associated with favourable outcome which was a normal somatisation score at inclusion in the study. Gelauff and Stone recently summarised what is known about prognostic factors in FND [7]. The authors found that longer duration of symptoms was associated with a negative outcome, but this we could not confirm probably by the exclusion of patients with a longer duration of symptoms. According to the authors only a few studies investigated the effect of comorbid functional symptoms on outcome. These studies had conflicting results. In our study somatisation tended to be associated with outcome.

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What are the consequences of the results of our study for clinical practice? Patients with FND can reach a favourable outcome without psychotherapy. The most important factor associated with a favourable outcome is a score in the normal range of a somatisation scale. To recognize these patients a scoring system is not required. Neurologists can easily distinguish patients with FND from those who in addition have symptoms of chronic fatigue, irritable bowel syndrome or fibromyalgia.

How can outcome in patients with high somatisation scores be improved? Not necessarily by psychotherapy. Many patients with FND are presently treated with physiotherapy for which there increasingly is evidence of efficacy [8]. We suggest to pay more attention to symptoms other than the neurological in patients who are treated with physiotherapy for FND.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Table 1
Baseline characteristics and use of psychotherapy in relation to treatment outcomes at 12 months (n = 193).

| Characteristics                      | Total study group (n = 193) | Favourable outcome* (n = 60) | Not-favourable outcome* (n = 133) | p value |
|--------------------------------------|----------------------------|-----------------------------|----------------------------------|---------|
| Sex                                  |                            |                             |                                  |         |
| Women                                | 53 (27.5%)                 | 18 (30%)                    | 35 (26.3%)                       | 0.61    |
| Men                                  | 140 (72.5%)                | 42 (70%)                    | 98 (73.7%)                       |         |
| Ethnicity                            |                            |                             |                                  |         |
| Caucasian                            | 151 (78.2%)                | 48 (80%)                    | 103 (77.4%)                      | 0.85    |
| Other                                | 42 (21.8%)                 | 12 (20%)                    | 30 (22.6%)                       |         |
| Education level                      |                            |                             |                                  |         |
| Low/medium                           | 127 (66.1%)                | 44 (73.3%)                  | 83 (62.9%)                       | 0.19    |
| High                                 | 65 (33.9%)                 | 16 (26.7%)                  | 49 (37.1%)                       |         |
| Missing (n = 1)                      |                            |                             |                                  |         |
| Duration of symptoms                 |                            |                             |                                  |         |
| <6 Months                             | 61 (31.6%)                 | 21 (35%)                    | 40 (30.1%)                       | 0.51    |
| 6–12 Months                          | 132 (68.4%)                | 39 (65%)                    | 93 (69.9%)                       |         |
| Mean (SD) age                        | 40.1 (14.7)                | 38.2 (13.4)                 | 40.9 (15.2)                      | 0.24*   |
| Somatization level                   |                            |                             |                                  |         |
| Normal                               | 106 (54.9%)                | 39 (65%)                    | 67 (50.4%)                       | 0.06    |
| High*                                | 87 (45.1%)                 | 21 (35%)                    | 66 (49.6%)                       |         |
| HADS Anxiety level                   |                            |                             |                                  |         |
| Normal                               | 137 (71.4%)                | 45 (73%)                    | 92 (69.7%)                       | 0.5     |
| High*                                | 55 (28.6%)                 | 15 (25%)                    | 40 (30.3%)                       |         |
| HADS Depression level                |                            |                             |                                  |         |
| Normal                               | 152 (79.2%)                | 52 (86.7%)                  | 100 (75.8%)                      | 0.12    |
| High*                                | 40 (20.8%)                 | 8 (13.3%)                   | 32 (24.2%)                       |         |
| Psychotherapy                        |                            |                             |                                  |         |
| No                                   | 131 (68.6%)                | 45 (73%)                    | 86 (65.6%)                       | 0.24    |
| Yes                                  | 60 (31.4%)                 | 15 (25%)                    | 45 (34.4%)                       |         |
| Missing (n = 2)                      |                            |                             |                                  |         |

*Favourable outcome (=no complaints anymore; complaints improved greatly); †Not-favourable outcome (=complaints improved somewhat; complaints remained the same; complaints deteriorated a bit; complaints deteriorated substantially); *P value based on the Fisher’s exact test; †P value based on the two group t-test; *Cut off ≥29 points on the somatization subscale of the SCL-90; †Cut off ≥11 points on the concerning HADS subscale.

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