Psychiatry Research ■ (■■■■) ■■■–■■■

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Changes in delusional dimensions and emotions over eight weeks of antipsychotic treatment in acute patients

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ARTICLE INFO

Article history:
Received 9 October 2014
Received in revised form
18 April 2015
Accepted 7 June 2015

Keywords:
Delusions
Psychosis
Antipsychotics
Conviction
Distress
Depression
Anxiety

ABSTRACT

Delusional experiences can be considered on a range of dimensions including conviction, distress, preoccupation, and disruption, which have been shown to be related to depression and anxiety. This study aimed to test the hypotheses that delusional conviction is less responsive to antipsychotic treatment than delusional distress and preoccupation, and that depression and anxiety reduce alongside improvements in delusional dimensions. Forty acutely ill inpatients with delusions were assessed during their early stage of antipsychotic treatment. Interview data were analysed using mixed models for repeated measures. There was a significant reduction in psychotic symptoms over eight weeks, after controlling for baseline dosage of antipsychotics. We found no differential rate of improvement across delusional dimensions, and all dimensions improved over time. However, conviction ratings remained relatively high throughout the eight weeks. There was no significant improvement in anxiety and depression, and delusional preoccupation covaried with anxiety and depression throughout eight weeks, suggesting a relationship between emotional and delusional processes during the early recovery phase of psychosis.

1. Introduction

Delusional experience has been conceptualised as consisting of various dimensions, with conviction, distress, preoccupation and disruption to life being commonly identified (Peters et al., 2004; Lincoln, 2007). Studies of psychological interventions have reported differential changes in these delusional dimensions (Chadwick and Lowe, 1990, 1994; Sharp et al., 1996), with newer psychological interventions being developed to specifically target delusional conviction and distress (Garety et al., 2014; Moritz et al., 2014; Freeman et al., 2015). Investigations of how delusional dimensions respond to different treatment modalities, such as pharmacological interventions, should increase our understanding of their psychological mechanisms of action in reducing delusional symptoms. A more sophisticated understanding of the medication effects on patients' subjective delusional experience over time may in turn inform discussions about treatment between patients and physicians.

Mizrahi et al. (2006) and So et al. (2014) examined multidimensional symptom changes over the first six weeks and two weeks of antipsychotic treatment respectively. Mizrahi et al. (2006) found a reduction in the behavioural impact of psychotic symptoms within the first two weeks of treatment, whereas conviction in psychotic experiences decreased later (at six weeks). Using an experience-sampling method, So et al. (2014) found improvement in delusional distress and disruption, but not in delusional conviction and preoccupation, during the first two weeks of treatment. These two studies indicated the possibility of a differential treatment response on aspects of psychotic symptoms (including delusions), with distress improving more and more quickly than conviction during initial treatment. However, Mizrahi et al. (2006) measured 'principal psychotic experience' which included both delusions and hallucinations. So et al. (2014) assessed change in delusional dimensions specifically, but covered two weeks only. We therefore aimed to examine how delusional dimensions respond to antipsychotics in a larger sample over a longer period.

Symptoms of anxiety and depression are highly prevalent in psychosis. Recent reviews (Hafner, 2010; Garety and Freeman, 2013; Hartley et al., 2013; Freeman and Garety, 2014) have argued that emotional processes, including a worry thinking style, negative self-perception, and interpersonal sensitivity, are associated with delusional formation and persistence, especially persecutory delusions. This has been supported by experimental studies (Ellett et al., 2008; Lincoln et al., 2010; Freeman et al., 2014) and longitudinal investigations (Thewissen et al., 2011; Fowler et al., 2012; Vorontsova et al., 2013). In addition, depression and anxiety have

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http://dx.doi.org/10.1016/j.psychres.2015.06.027
0165-1781/

been found to be exacerbated during and after delusions, especially following negative appraisals (Iqbal et al., 2000; Freeman et al., 2001; Birchwood et al., 2005; Green et al., 2006). Therefore, it seems that emotional processes can be both triggers and consequences of delusions. However, the association of depression and anxiety with delusional dimensions has only been examined in a few studies, yielding inconsistent results (Freeman and Garety, 1999; Smith et al., 2006; Startup et al., 2007). In view of the evidence that antipsychotics can alleviate depressive and anxiety symptoms (Tollefson et al., 1997, 1998a, 1998b; and review by Möller, 2005), the present study aimed to investigate both changes in delusional dimensions and negative emotions in patients with delusions during the early phase of antipsychotic treatment. More specifically, this study concerns whether depression and anxiety improve in step with delusional dimensions in response to antipsychotics.

The major hypotheses were as follows:

1. Delusional distress, preoccupation and disruption will reduce prior to delusional conviction.
2. Depression and anxiety will reduce alongside improvements in delusional dimensions.

2. Method

2.1. Participants

Ethical approval was granted by the Camden and Islington Community Research Ethics Committee (ref. 08/H0722/76). Patients were recruited from acute psychiatric wards of the South London and Maudsley NHS Foundation Trust. Inclusion criteria were as follows: (i) aged 15–65 years; (ii) a case note diagnosis of a psychotic disorder; (iii) current experience of delusions, (iv) drug-naïve or drug-free for at least a month prior to admission, and (v) prescription of antipsychotics for less than four weeks before study participation. Patients with drug-induced psychosis, organic psychosis or a primary diagnosis of substance misuse were excluded. Fulfilment of the study criteria was determined by the treating psychiatrist, with presence of delusions further confirmed using the Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987).

Our sample consisted of 40 in-patients, with a mean age of 32.2 years (range 18–62) and 62% female ($n=25$). Major psychiatric diagnoses were Schizophrenia (25.0%), Bipolar disorder (20.0%), Unspecified psychosis (17.5%), Schizoaffective disorder (10.0%), Depression with psychotic features (10.0%), Brief psychotic disorder (10.0%), Delusional disorder (5.0%) and Schizophreniform disorder (2.5%). Mean age of psychotic onset was 30.4 years (range 18–58). Participants had an average of 2.4 psychiatric admissions (SD=2.73, range 1–15), with 26 patients (65%) being hospitalised for the first time due to psychosis. Out of the 40 patients, 38 (95%) rated ≥ 4 on the suspiciousness item of the PANSS (Kay et al., 1987), whereas 10 (25%) rated ≥ 4 on the grandiosity item.

Eight participants (20.5%) were antipsychotic-free at their first interview, whereas 19 participants (47.5%) had received antipsychotics for less than 14 days. On average, patients were assessed 5.90 days (range 0–27) after the beginning of treatment. The majority (92.3%) were on atypical antipsychotics (Olanzapine, Risperidone, Aripiprazole, Amisulpiride, and Quetiapine); one (2.56%) was on a typical antipsychotic (Trifluoperazine) and two (5.13%) were on both typical and atypical antipsychotics. The mean dose of antipsychotics at the time of the initial interview, in chlorpromazine equivalents (Andreasen et al., 2010), was 195.6 mg/day (SD=119.1).

2.2. Measures

2.2.1. Clinical symptom severity

Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987) is a 30-item, 7-point (1–7) rating scale developed for assessing symptoms associated with schizophrenia over the past week. Good inter-rater reliability (0.83–0.87 for the four scales) had been reported (Kay et al., 1988).

2.2.2. Dimensions of delusions

Delusional dimensions (conviction, distress, preoccupation and disruption) were assessed using self-reported VAS[1] (Brett-Jones et al., 1987; Sharp et al., 1996).

At baseline interview, the interviewer elicited the major delusional belief. The statement that participants chose to describe their delusion was then incorporated into the dimension questions for subsequent assessments. The dimension questions were as follows: “To what extent do you believe that (the delusional belief) is true?” (conviction); “How (distressed/angry/fearful/worried/restless) do you feel about (the delusional belief)” (distress); “How much have you been thinking/worrying about (the delusional belief)?” (preoccupation); “How much has (the delusional belief) been affecting/getting in the way of your daily life?” (disruption to life). The participant rated the intensity of each of the four dimensions on a 0–100 VAS.

2.2.3. Emotion

Beck Depression Inventory-II (BDI-II) (Beck et al., 1996) and Beck Anxiety Inventory (BAI) (Beck et al., 1988) are 21-item self-report inventories that assess symptoms of depression and anxiety respectively (score range 0–63). Both scales had high internal consistency and test–retest reliability, adequate validity and diagnostic discrimination.

2.3. Procedures

Consenting participants were interviewed by a qualified clinical psychologist five times over eight weeks (week 0, week 1, week 2, week 4, and week 8). The first interview took place as soon as patients were hospitalised, and within one month of the start of antipsychotic treatment. Only delusional dimensions were assessed at every assessment. PANSS was assessed at baseline, 2 weeks, 4 weeks and 8 weeks. BDI-II and BAI were completed at baseline, 4 weeks and 8 weeks.

2.4. Statistical analysis

Statistical analyses were conducted using SPSS 16.0 for Windows (SPSS, 2007).

For hypotheses 1–2, a series of mixed models for repeated measures (Twisk, 2006) were tested and their model fit indices were compared. The model with the lowest Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC) was chosen as the best model for that hypothesis. The mixed model approach was used because (a) it includes fixed and random effects of modelling; (b) it models the effect of time as a continuous predictor, which is of importance due to irregular assessment intervals; (c) it can handle unbalanced datasets (e.g. when missing

[1] Three measures of delusional dimensions were included in this study – Psychotic Symptom Rating Scale (PSYRATS) (Haddock et al., 1999), Personal Questionnaire (PQ) (Shapiro, 1961) and VAS. Since changes in delusional dimensions were highly correlated across measures ($r=0.60$–0.82 between VAS and PSYRATS, and $r=0.44$–0.85 between VAS and PQs), the analyses reported in this paper pertain to VAS only for the sake of succinctness. Parallel analyses were conducted for the other two measures, and are available from the first author.

Please cite this article as: So, S.H., et al., Changes in delusional dimensions and emotions over eight weeks of antipsychotic treatment in acute patients. Psychiatry Research (2015), http://dx.doi.org/10.1016/j.psychres.2015.06.027