Predictors of short-term course in Mexican first-episode psychosis patients

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Artículo original

SUMMARY

Background and objectives

The identification of prognostic factors in patients with schizophrenia and related psychotic disorders should enhance our understanding of the aetiology of these disorders and improve their treatment. The first years following an initial episode of psychosis are a «critical period» for biological and psychosocial influences that affect future outcome. Both, short-term outcome and baseline predictors, have been defined by different measures, making the comparison among studies difficult. Studies of the predictive value of baseline demographic and clinical characteristics in the Mexican population are still limited. Hence, the present study aims to: 1. replicate the prognostic value of selected patient characteristics previously related to the short-term course of psychosis in Mexican first-episode psychosis patients, and 2. retrospectively assess their prognostic value in the prediction of diagnosis, presence of psychotic residual symptoms, and number of psychotic episodes at least three-years later.

Methods

Information on baseline predictor variables (sociodemographic, premorbid phase, context of the first episode, dimensions of psychopathology) and clinical outcome (diagnosis, residual symptomatology, psychotic episodes) was obtained from the clinical records of 51 patients with a short-term course of psychosis and whose available follow-up period was at least three years long (mean=5.8, SD=2.1).

Results

Poor premorbid adjustment and hospitalization at first psychotic episode were significant predictors of a schizophrenia diagnosis. Lower educational level and an insidious type of onset significantly predicted the presence of residual symptoms. Hospitalization at first psychotic episode and higher scores on the psychotic dimension at onset significantly predicted subsequent psychotic episodes.

Discussion

Low educational level increased the risk of residual symptoms, possibly because it hinders treatment continuity. Poor premorbid adjustment was related to a schizophrenia diagnosis at the follow-up assessment,

supporting previous findings of their high ratings for premorbid impairment, including social withdrawal and dysfunctional peer relationship. Insidious onset was predictive of persistent residual symptoms; an association possibly mediated by the duration of untreated psychosis (DUP). Being hospitalized at first episode was a significant prognostic factor for schizophrenia diagnosis and multiple psychotic episodes; the severity and nature of symptoms at first episode that require hospitalization might account for these associations. Replicating previous findings, multiple-episode patients scored significantly higher than the single-episode patients on the psychoticism dimension. Most baseline factors did not predict diagnosis. This seems congruent with a dimensional view of psychosis suggesting that even though schizophrenic and non-schizophrenic psychoses are classified as separate families of disorders, they exist along a continuum of psychosis that crosses diagnostic boundaries, sharing aetiological and risk factors. Currently, both the amelioration of severe psychotic symptoms and the improvement of psychosocial functioning and quality of life are feasible aims. Symptom exacerbation and hospitalizations might cause cumulative deterioration and impair the patient's social reintegration. Thus, relapse prevention is an important objective in treatment. The identification of reliable predictors of illness course has significant implications for treatment and service planning.

Conclusions

The predictive value of several factors was replicated in this sample of patients with psychotic illnesses, although predictors seem to relate differently to the three short-term course measures. Comprehensively mapping the development and outcome of the first episode of psychosis requires the use of standardized measurement tools and the longitudinal assessment of multiple outcome measures.

Key words: First-episode psychosis, course predictors, outcome criteria, illness course, schizophrenia.

RESUMEN

Antecedentes y objetivos

La identificación de factores pronósticos en pacientes con esquizofrenia y otros trastornos psicóticos relacionados podría facilitar la compren-

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sión de la etiología de estos trastornos así como mejorar los tratamientos existentes. Los primeros años a partir del primer episodio psicótico son un «período crítico» en que factores biológicos y psicosociales influyen en el pronóstico futuro del trastorno. El hecho de que tanto el curso temprano como los predictores de línea base hayan sido definidos según diferentes medidas ha dificultado la comparación entre estudios. Los estudios sobre el valor predictivo de características clínicas y demográficas de línea base en población mexicana son aún escasos. En este sentido, el presente estudio tiene como objetivos: 1. replicar el valor pronóstico de algunas características del paciente previamente relacionadas con el curso temprano de la psicosis en una muestra de pacientes mexicanos con un primer episodio psicótico, y 2. evaluar retrospectivamente su valor como predictores del diagnóstico final, la presencia de síntomas psicóticos residuales y el número de episodios psicóticos ocurridos al menos tres años más tarde.

Método
Se recabó información acerca de variables predictoras de línea base (sociodemográficas, de fase premórbida, contexto del primer episodio, y dimensiones de la psicopatología) y sobre la evolución clínica (diagnóstico, síntomas psicóticos residuales, episodios psicóticos) de los expedientes de 51 pacientes con psicosis de curso temprano y con un tiempo de seguimiento disponible de al menos tres años (media=5.8, SD=2.1).

Resultados
Un ajuste premórbido pobre y haber sido hospitalizado en el primer episodio psicótico fueron predictores significativos de un diagnóstico de esquizofrenia. Un nivel educativo más bajo y un inicio insidioso de la enfermedad fueron predictores significativos de la presencia de síntomas residuales. La hospitalización durante el primer episodio psicótico y puntuaciones altas en la dimensión psicótica al inicio de la enfermedad fueron predictores significativos de episodios psicóticos posteriores.

Discusión
Se observó que un nivel educativo bajo incrementa el riesgo de síntomas residuales, posiblemente al dificultar la continuidad en el tratamiento. Se encontró que el ajuste premórbido pobre está relacionado con pacientes con esquizofrenia, corroborando así hallazgos

previos sobre las altas puntuaciones de éstos en discapacidad premórbida, incluidos retraimiento social y relaciones disfuncionales con los pares. Un inicio insidioso predijo la presencia de síntomas residuales persistentes. La Duración de la Psicosis No Tratada (DPNT) puede actuar como mediador en tal asociación. La hospitalización en el primer episodio fue un factor pronóstico de diagnóstico de esquizofrenia y de múltiples episodios psicóticos. La gravedad y naturaleza de los síntomas en un primer episodio que requieran hospitalización es un factor a tomar en cuenta para explicar estas asociaciones. Los pacientes con episodios múltiples puntuaron más alto que los pacientes con un único episodio en la dimensión de psicoticismo. En concordancia con estudios previos, los pacientes con episodios psicóticos múltiples tuvieron puntuaciones más altas en la dimensión de psicoticismo que los pacientes con un episodio único de psicosis. La mayoría de los factores de línea base no predijeron el diagnóstico. Esto coincide con un enfoque dimensional de la psicosis, el cual sugiere que, aunque las psicosis esquizofrénicas y las no esquizofrénicas se clasifiquen como trastornos independientes, ambas existirían a lo largo de un continuo de psicosis, cruzando límites diagnósticos y compartiendo factores etiológicos y de riesgo en común. Actualmente, no sólo la mejoría de los síntomas psicóticos graves, sino también el buen funcionamiento psicosocial y la calidad de vida son metas viables. La exacerbación de síntomas y las hospitalizaciones pueden causar un deterioro acumulativo y afectar la reintegración social del paciente. Por ello, la prevención de recaídas es también un objetivo importante del tratamiento. La identificación de predictores confiables del curso de la enfermedad tiene importantes implicaciones para la planeación de tratamientos y servicios.

Conclusiones
Se replicó el valor predictivo de varios factores en esta muestra de pacientes con psicosis, aunque los predictores parecen relacionarse de manera diferente con cada una de las tres medidas de curso temprano. Por ello, se ha de poner atención en la medición y seguimiento estandarizados de diversas medidas del curso de la enfermedad a fin de trazar un mapa completo de la evolución y el pronóstico de un primer episodio de psicosis.

Palabras clave: Primer episodio psicótico, predictores de curso, criterios de pronóstico, curso de la enfermedad, esquizofrenia.

INTRODUCTION

Schizophrenia is one of the most disabling mental disorders; however, it can no longer be conceived as a hopeless and inevitable pathway to deterioration.[1] The course following a first psychotic episode is clearly heterogeneous.[2] Although schizophrenia is typically viewed as a chronic and episodic disorder, between 12-22% of patients never relapse or experience residual symptoms after their first episode of psychosis.[3,4]

Although the course of psychosis is heterogeneous (whether treated or untreated), its presentation seems most severe and disturbing during the onset and the first years of illness.[5] Eventually, between two and five years after the first episode, psychotic disorders appear to plateau and follow a more stable course.[3] These first years following the initial episode of psychosis (the so-called «critical period») are

viewed as a crucial time during which biological and psychosocial changes have decisive effects on the patient. Characteristics assessed during the critical period provide promising predictors of patients' long-term outcome.[5] Moreover, evidence[6] indicates that the course and the severity of psychotic illnesses are predictable by year three (including, on average, 12 months of untreated psychosis).[5]

Current early intervention programs and research are based on the premises that this «critical period» influences the long-term course of psychosis and that the critical period is particularly malleable to intervention.[5] Early intervention efforts aim at reducing suicide and relapse rates, preventing social and cognitive deterioration, and ameliorating persisting symptoms.[7,8] These programs have a greater impact on illness course and outcome when applied in the early phase of the disorder.[9] The identification of characteristics that predict clinical and functional outcomes in newly diagnosed

psychosis patients should enhance our understanding of such disorders and provide guidance for treatment.

The complexity and heterogeneity of schizophrenia and related psychoses require reliable and valid measures of outcome to capture patients' functioning and impairment over time.[3] Schizophrenic psychoses show, compared to schizoaffective and affective psychoses, a poorer global outcome, more deteriorating course, greater presence of negative symptoms, and more persistent impairments in several aspects of social life, such as communication and cognitive functions.[10,11] A variety of clinical, functional and quality of life measures have been used to assess outcome,[7] but this diversity makes the comparison among studies difficult.[8]

The most widely used outcome is diagnosis, which can be reliably established after approximately six months of onset of psychosis.[12] Illness course is also extensively reported as an outcome measure, varying from a full recovery to a chronic deteriorating course.[12] Some studies, simplifying the course of psychosis as «poor» or «good», have defined course by relying either on the presence of residual symptoms[4,13] or on the occurrence of subsequent relapses into acute psychosis.[14] However, there is a shortage of studies comparing the impact of using either one or the other, particularly on their ability to evaluate the utility of putative prognostic indicators.

Studies have also differed in the premorbid and first-episode factors analysed as possible predictors of outcome. Sociodemographic variables, clinical features, premorbid characteristics, context of presentation of the first episode of psychosis, and type of treatment have been the most common factors related to short- and long-term prognosis. Literature on this topic is abundant, suggesting that various factors, such as early age at onset, male gender, single status, poor premorbid adjustment, lack of insight, and symptom severity at onset are highly related to poor outcome,[3,15] although not all findings concur.[7,8]

Studies with Mexican first episode-psychosis patients indicate that this population does not differ significantly in its baseline demographic and clinical characteristics when compared to populations from developed countries.[16] Although the predictive value of the DUP has been replicated in the Mexican population in a one-year follow-up study,[17] the predictive value of other first episode psychosis characteristics after the critical period needs study.

Research has identified so far important predictors of outcome. However, there is a shortage of studies analysing the association of premorbid and first episode variables with different outcome definitions. Furthermore, studies of short-term course predictors in Mexican first-episode psychosis patients are also limited. Therefore, this study aims to: 1. replicate the prognostic value of factors (sociodemographic, premorbid, context of the first psychotic episode, and psychopathology dimensions) previously related to the short-term course of psychosis in retrospectively assessed Mexican first-episode psychosis patients, and 2. assess their prognostic value in the prediction of final diagnosis, presence of psychotic residual symptoms, and number of psychotic episodes.

METHODS

Participants

This is a retrospective case series study focusing on the short-term course of psychosis in a cohort of patients who have received mental health care in the adult service of the Hospital Psiquiátrico Yucatán (HPY). The HPY is a public institution located in the city of Merida, Mexico, that offers inpatient and outpatient care to all patients in need. The HPY has a broad catchment area that includes patients from neighbouring states (e.g. Campeche, Quintana Roo); however, for this study, sampling was restricted to the inhabitants of the city of Merida. Data were collected through the review of all clinical files after obtaining formal authorization and ethical approval from the Hospital Committee. Additional inclusion criteria were: 1. occurrence of a first episode of psychosis between 1999 and 2005; 2. age at onset 16-45 years; and 3. a primary current DSM-IV-TR[12] diagnosis of schizophrenia, schizophreniform, schizoaffective disorder, delusional disorder, brief psychotic disorder, or psychosis not otherwise specified. Exclusion criteria were: 1. psychoses of affective, organic, or toxic type, 2. an evident intellectual disorder, and 3. no follow-up information available.

An initial random sample of 111 cases was selected. LG was responsible for the examination of the clinical histories and the review of current diagnoses according to DSM-IV-TR criteria[12] as some might have changed since onset. Nine cases were excluded: 3 affective psychoses, 2 organic psychoses, 2 toxic psychoses, 1 missing file, and 1 case with a duplicated file. Furthermore, 51 cases with a follow-up time period shorter than three years were omitted. The final sample of 51 short-term course psychosis patients included 23 men and 28 women, with an average age at first episode of 28.1 (SD=7.6). All cases in the sample were followed for at least three years (mean=5.8, SD=2.1) and had received antipsychotic medication.

Materials

The predictors identified at the first episode included: 1. sociodemographic data (gender, marital status, educational level, occupational status), 2. premorbid phase characteristics (premorbid adjustment, identified trigger, type of onset), 3. features of the context of the first episode (hospitalization, substance abuse, level of insight), and 4. dimensions of psychotic psychopathology. Classification

of premorbid adjustment was based on the medical record information about possible i) learning, ii) behavioural, iii) emotional or iv) social difficulties present at any time before the first psychotic episode. Based on the available information from clinical files, premorbid adjustment was categorized as poor or good. For psychopathology, the recorded presence of symptoms corresponding to each of its three dimensions was rated by translating the clinical records information into the most representative Positive and Negative Syndrome Scale (PANSS)[18] items based on the criteria provided by Andreasen et al.[19] The psychoticism dimension included recorded symptoms of delusions, unusual thought content and hallucinatory behaviour; the disorganization dimension included symptoms of conceptual disorganization, mannerism or posturing; the dimension of negative symptoms included blunted affect, social withdrawal and lack of spontaneity.

Outcome was classified according to three criteria. First, DSM-IV-TR[12] last available diagnoses were dichotomized into: 1. schizophrenia, and 2. other psychoses. A second criterion grouped cases as: 1. with residual symptoms, or 2. with no residual symptoms, at the time of the outcome assessment. A third criterion considered the number of psychotic episodes recorded during the follow-up period (including the initial episode), classifying cases as: 1. single episode, or 2. multiple episodes.

First, Pearson correlations were run to explore possible associations among the three outcome criteria. Next, separate regressions were computed for sociodemographic, premorbid phase, context of first psychotic episode, and psychopathology variables with the predictors for each analysis entered simultaneously. Statistical analyses were computed with SPSS, version 15.[20]

RESULTS

Table 1 presents the results of the binary logistic regressions predicting the three outcome measures.

Current diagnosis and number of psychotic episodes were significantly correlated (r=+0.32, p=0.02); that is, patients with schizophrenia were likely to have experienced more than one psychotic episode. The presence/absence of residual symptoms was not significantly associated with either current diagnosis (r=-0.06) or to the number of psychotic episodes (r=+0.05).

Sociodemographic variables

Sociodemographic factors at onset were not associated with a diagnosis of schizophrenia or reports of relapse at the follow-up. However, lower educational level at onset was associated with heightened risk of residual symptoms at the follow-up.

Premorbid phase variables

Poor premorbid adjustment was significantly associated with a subsequent diagnosis of schizophrenia. An insidious onset was associated with residual symptoms, and oddly with those who did not relapse (single episode). Nevertheless, it must be pointed out that 11 of the 19 patients (57.9%) with a single episode presented residual symptoms; furthermore, all 11 had an insidious onset.

Context of first psychotic episode

Patients who were hospitalized during their first psychotic episode were more likely to have a diagnosis of schizophrenia and to relapse (multiple episodes) by the follow-up assessment. Substance abuse did not appear as a significant predictor of outcome, although only a small percentage of patients reported this abuse (n=6, 11.8%). Surprisingly, poor insight at the first-episode identified patients who subsequently were diagnosed with psychoses other than schizophrenia and who did not relapse.

Dimensions of psychopathology at onset

Psychotic symptoms present at onset significantly related to multiple episodes, whereas disorganization related to absence of residual symptoms. Negative symptoms did not predict any of the three outcome measures.

DISCUSSION

Baseline characteristics are useful predictors of short-term outcome in psychosis, yet they relate differently to particular outcome measures: schizophrenia was predicted by poor premorbid adjustment and hospitalization, residual symptoms by lower educational level and an insidious onset, whereas multiple psychotic episodes were related to hospitalization and psychoticism.

Predictors of outcome

Sociodemographic variables

The mean age at psychosis onset of this sample is higher than that of some other first-episode studies, although it is consistent with other previous findings obtained in first-episode Mexican patients.[21] Thus, there seems to be a significant range in terms of age at onset, possibly due to sociological differences between regions of the country or to differences in the access to mental health care. In any case, further research should examine how differences in age at onset might impact the relative importance of different predictors of later outcome.

Table 1. Logistic regression analyses of baseline variables predicting the three different outcome criteria

Variable Category / Range	Outcome: Last diagnosis			Outcome: Presence of residual symptoms (R.S.)			Outcome: Number of episodes		
	Schizophrenia n = 34 Mean (SD) or %	Other psychosis n = 17 Mean (SD) or %	Odds Ratio (95% CI)	With R.S. n = 31 Mean (SD) or %	With NO R.S. n = 20 Mean (SD) or %	Odds Ratio (95% CI)	Multiple episodes n = 32 Mean (SD) or %	Single episode n = 19 Mean (SD) or %	Odds Ratio (95% CI)
1. Sociodemografhic variables									
Age at onset (years) (n=51)	27.3 (7.8)	29.7 (7.3)	1.04 (0.97 – 1.13)	29.1 (7.8)	26.4 (7.4)	0.95 (0.88 - 1.03)	26.8 (7.6)	30.2 (7.5)	1.06 (0.98 – 1.15)
Gender (n=51) Male / Female	52.9%/47.1%	29.4%/70.6%	2.70 (0.78 – 9.35)	51.6%/48.4%	35.0%/65.0%	1.98 (0.62 – 6.31)	43.8%/56.3%	47.4%/52.6%	0.86 (0.28 – 2.70)
Marital status (n=46) Single / ever married	69.0%/31.0%	41.2%/51.8%	3.18 (0.91 – 11.03)	60.7%/39.3%	55.6%/44.4%	1.24 (0.37 - 4.10)	60.7%/39.3%	55.6%/44.4%	1.24 (0.37 - 4.10)
Educational level (n=49) Basic / Medium or higher	53.1%/46.9%	52.9%/47.1%	1.01 (0.31 – 3.27)	66.7%/33.3%	31.6%/68.4%	**4.33*** **(1.27–14.82)**	56.7%/43.3%	47.4%/52.6%	1.45 (0.46 - 4.61)
Work or study (n=47) No / Yes	21.9%/78.1%	13.3%/86.7%	1.82 (0.33 – 10.05)	25.8%/74.2%	6.3%/93.8%	5.22 (0.59–46.07)	13.8%/86.2%	27.8%/72.2%	0.42 (0.10 - 1.82)
2. Premorbid phase variables									
Premorbid adjustment (n=51) Poor / Good	55.9%/44.1%	17.6%/82.4%	**8.11*** **(1.81 – 36.42)**	51.6%/48.4%	30.0%/70.0%	1.78 (0.48 – 6.60)	46.9%/53.1%	36.8%/63.2%	2.16 (0.62 – 7.55)
3. Context of first psychotic episode variables									
Identified trigger (n=49) Yes / No	55.9%/44.1%	52.9%/47.1%	1.23 (0.34 – 4.54)	54.8%/45.2%	55.0%/45.0%	0.97 (0.27 – 3.48)	56.3%/43.8%	52.6%/47.4%	1.22 (0.37 – 4.07)
Type of onset (n=51) Insidious / Sudden, Acute	70.6%/29.4%	82.4%/17.6%	0.28 (0.06 – 1.36)	90.3%/9.7%	50.0%/50.0%	**8.28*** **(1.85–37.13)**	65.6%/34.4%	89.5%/10.5%	**0.18*** **(0.03 – 0.97)**
Hospitalization (n=51) Yes / No	52.9%/47.1%	29.4%/70.6%	**4.00*** **(1.01 – 15.85)**	45.2%/54.8%	45.0%/55.0%	1.38 (0.40 – 4.68)	53.1%/46.9%	31.6%/68.4%	**3.78*** **(0.99–14.39)**
Substance abuse (n=51) Yes / No	11.8%/88.2%	11.8%/88.2%	1.40 (0.19 – 10.08)	16.1%/83.9%	5.0%/95.0%	0.24 (0.02 – 2.42)	9.4%/90.6%	15.8%/84.2%	2.69 (0.41–17.65)
Level of insight (n=51) Poor / Partial	55.9%/44.1%	82.4%/17.6%	**5.20*** **(1.14 – 23.75)**	74.2%/25.8%	50.0%/50.0%	0.32 (0.09 – 1.11)	56.3%/43.8%	78.9%/21.1%	**4.04*** **(0.98–16.60)**
4. Psychopathology symptom counts									
Psychoticism (n=51)	2.38 (0.78)	2.00 (0.94)	0.56 (0.26 - 1.21)	2.13 (0.89)	2.45 (0.76)	1.33 (0.62 – 2.86)	2.56 (0.62)	1.74 (0.93)	**0.23*** **(0.08 – 0.62)**
Disorganization (n=51)	0.41 (0.56)	0.29 (0.59)	0.75 (0.22 – 2.53)	0.23 (0.43)	0.60 (0.68)	**3.31*** **(1.02–10.78)**	0.41 (0.56)	0.32 (0.58)	1.68 (0.47 – 6.05)
Negative (n=51)	0.56 (0.79)	0.29 (0.59)	0.49 (0.18 – 1.31)	0.45 (0.68)	0.50 (0.83)	1.32 (0.58 – 3.03)	0.38 (0.55)	0.63 (0.96)	1.60 (0.65 – 3.98)

$* p < .05$

An earlier age at onset, male gender, single marital status, lower educational level, and no daily occupation, among other sociodemographic factors, have been associated with a poorer outcome in first-episode psychosis patients;[4,15] nevertheless, in this study they were not significantly relations to diagnosis or relapses. A low educational level at onset did increase the risk of residual symptoms, possibly because it hinders treatment continuity. A review found that higher education and good social functioning of patients with psychosis were associated with good adherence to treatment.[22]

Premorbid phase variables

Poor premorbid adjustment has been associated with more negative symptoms in the short-term course of illness, less improvement in negative symptoms, and overall poorer clinical and social functioning. On the other hand, good premorbid adjustment has been related to better clinical outcome, not only in chronic schizophrenia, but also in affective psychoses,[23] and in psychotic disorders that are substance induced.[24] Premorbid adjustment appears to be an important predictor of diagnosis. First-episode psychotic patients who later develop schizophrenia compared to those who develop bipolar disorder have not only shown more persistent positive and negative symptoms at follow-up, but also higher ratings of premorbid impairment, including social withdrawal and dysfunctional peer relationships.[25,26]

In the present study, an insidious onset significantly predicted residual symptoms. This association might be mediated by DUP. An acute onset relates to shorter DUP in patients,[27] possibly because the sudden changes and appearance of psychotic symptoms might well be more noticeable to patients and relatives, prompting treatment seeking. On the other hand, an insidious type of onset has been found predictive of longer DUP[27] and poorer global psychopathological and psychosocial outcome.[28] Although an insidious type of onset usually relates to a poor outcome, in our study it was surprisingly related to single-episode outcome. However, this may simply reflect the relatively short follow-up period. Previous research has shown that relapses in the short-term course of illness are not related to the type of onset[15,28] though they seemed related to DUP and to the delay in intensive psychosocial treatment.[28]

Context of first psychotic episode

The study of early psychosis has used hospitalization as an important outcome measure analysing predictive factors of re-hospitalization,[29,30] time spent in hospital,[31] and time between hospitalizations.[30] Here, we considered being hospitalized at first episode as a prognostic factor, resulting in significant risk for schizophrenia diagnosis and presence of multiple episodes at the reassessment, but not for residual symptoms. The severity and nature of symptoms at first episode that require hospitalization might account for the

association with a later diagnosis of schizophrenia. It has been suggested that lacking objective measures of symptoms, hospitalization can be used as a «proxy» measure of a psychotic episode[32] usually characterised by a significant deterioration due to positive symptoms. For this study, we considered hospitalization as a sign of severity and it was a significant prognostic factor of short-term course. Multiple episodes were also related to hospitalization at first episode. In a retrospective study, Rosen and Garety[4] found that hospitalization at first episode turned out to be a significant predictor only when the outcome definition took into account relapses and not only residual symptoms. Being hospitalized and under supervised treatment might have a more counteracting effect on residual symptoms, but not on the likelihood of relapse.

Poor insight has been associated with poorer cognitive functioning,[33] increased risk of relapse,[15,34] and readmission.[34] On the other hand, good insight of illness has been related to higher levels of depression.[33,35] Furthermore, most evidence supports an association throughout the first years after an initial episode between poor insight and increased symptoms,[33,35] though not all findings concur.[34] Various studies support the assumption of a causal chain connecting poor insight with poor treatment adherence and thus with impaired outcome and functioning; although this seems apparent during the treatment phase, the association with long-term adherence remains unclear.[36] In our study, insight was not considered at present but at the time of the first episode. Contrary to expectations, poor insight was significantly associated to other non-affective psychoses and single-episode outcome. These results are not easy to explain based on the information available and important factors that might mediate this effect (e.g. severity and nature of symptoms at onset, perception of condition as a mental disorder) must be considered on standardized prospective assessments.

Dimensions of psychopathology at onset

None of the three dimensions of psychopathology were associated with subsequent diagnoses. Although the result could be due to insufficient statistical power, an alternative possibility is that the nature of psychotic psychopathology at onset, though more severe in schizophrenic psychoses, is not specifically associated with later diagnoses. This would be consistent with research indicating that schizophrenia, schizoaffective disorder, and affective illness share common features and a general set of aetiological and risk factors.[37,38]

Psychotic (positive) symptoms were more common than disorganized and negative symptoms at the onset for the whole sample and for all groups. This was not surprising, given that positive symptoms typically herald the onset of a first, acute episode, and because for many patients negative symptoms develop as part of a chronic

course of the disorder. The psychotic dimension was only significant when predicting multiple- vs. single-episode patients, with the former group scoring higher. A 7-year follow-up of schizophrenic outpatients showed that lower positive symptoms were characteristic of those patients who did not relapse.[39]

Only a few patients displayed disorganized symptoms in their clinical histories, although surprisingly those with higher scores were more likely to be part of the non-residual symptom group. Unfortunately, the retrospective nature of the study restricts information to explore further the prognostic nature of these results.

For our sample, negative symptoms were not significant predictors of outcome. Negative symptoms at onset tend to be associated with residual symptoms more than other dimensions of psychosis or premorbid personality.[40] Moreover, in a retrospective study comparing groups of patients with single or multiple psychotic episodes, negative symptoms at first contact was the only dimension of psychopathology that stood out as a significant prognostic factor.[4] However, we did not replicate this finding. However, this may reflect that information on negative symptoms was not as readily noted and recorded as were the more striking positive and disorganized symptoms that typically signal the onset of a psychotic episode. Furthermore, negative symptoms at the time of first episode might be masked by those symptoms that cause severe behavioural disturbances, or they might evolve later in the course of illness.

Analysis of outcome criteria

Among the three selected short-term course measures, only diagnosis and number of episodes were significantly related, as most patients presented schizophrenia and had suffered multiple psychotic episodes. However, their only common prognostic factor of «poor outcome» was hospitalization. Hence the importance of using different measures to map with completeness the course and outcome of first-episode psychosis.

Poor premorbid adjustment and hospitalization at first episode were the only significant predictors of schizophrenia; hence, at first episode, clinical assessment must place particular attention to patients who require hospitalization and who have presented previous difficulties, as they are in higher risk to develop schizophrenia. Most baseline factors did not predict diagnosis. Even though schizophrenia implies a general poorer outcome than other psychoses, both affective and non-affective,[10,11] whether they differ etiologically is an issue still debated.[37,41] Some results suggest that even early in its course schizophrenia is distinguishable not only from affective psychoses,[42] but also from schizoaffective disorders.[43] Nevertheless, other findings suggest that schizophrenia has some overlapping features

with schizoaffective disorder (e.g. cognitive performance)[41] and even with bipolar disorder.[37] A dimensional view of psychosis suggests that even though schizophrenic and non-schizophrenic psychoses are seen as distinct entities, they would exist along a continuum of psychosis that crosses diagnostic boundaries and would have in common aetiological and risk factors.[38] Moreover, whether schizophrenia can be predicted at onset has also important clinical implications, as it involves that it might not be appropriate to make predictions at first–episode regarding diagnosis. As it is well-known, stating a premature diagnosis of schizophrenia can have adverse consequences for clinicians (e.g., therapeutic nihilism) and patients (e.g., hopelessness, stigma, demoralisation and depression).

A lower educational level and insidious onset were significantly related to patients with residual symptoms. These factors stand out as robust baseline predictors that hold predictive value over-and-above methodological similarities and differences among studies. The amelioration of core signs and symptoms is indispensable but not enough for recovery because persistent symptomatology, even if at a low level of severity, can interfere with behaviour and functioning, hindering patients' social, educational, and occupational development, and their chances of social reintegration.[44] Thus, the possibility of identifying patients at first-episode likely to suffer residual symptomatology has significant implications for treatment and service planning.

Higher functioning, lower positive symptoms, higher ability in self-care, and higher IQ relate to single episode patients,[39] whereas poor insight,[15] poorer premorbid childhood functionality, and noncompliance to the treatment highly contribute to relapse risk.[45] In the present study, hospitalization at first episode and psychotic symptoms significantly predicted multiple psychotic episodes. Relapses may have an important effect not only on the clinical, but also on the social functioning of patients. Exacerbation of symptoms and hospitalizations might cause cumulative deterioration in functioning and a diminished ability to maintain employment and relationships.[44] Thus, early intervention as well as standard treatment programs in psychosis must work to prevent relapses and to promote the maintenance of a stable clinical status.[46]

Limitations

Though the study of the course of psychosis should ideally rely on a prospective design, a retrospective study provides valuable information over a period of time and is recommended as a sensible starting point when research on this topic is developing at a new site. The number of baseline measures had to be restrained depending on the availability from case-notes; this might be useful to draw attention on what factors clinicians pay attention to in daily practice, as well as on how they record information.

Subsequent research may include patients who are inhabitants of other communities, which could yield interesting data on the search of mental health care, availability of services, and awareness of illness. Broadening the inclusion criteria to other types of psychosis such as affective, toxic, and organic, might also provide useful information of the vast psychosis spectrum. In a prospective study, a thorough exploration of the premorbid phase, the onset characteristics, and clinical family background at first-psychotic episode would certainly enrich the possibility of significant and generalizable findings.

CONCLUSIONS

Historically, schizophrenia and related psychoses have been characterized erroneously as necessarily having a deteriorating course. However, the course of these disorders is heterogeneous with many patients showing good recovery. Three alternative definitions of short-term course were retrospectively analyzed in a Mexican sample of first-episode psychosis patients: final diagnosis, presence of residual symptoms, and number of psychotic episodes. Findings indicate that some baseline variables are useful predictors for this particular population, and they appear to relate differently to particular outcome measures. Given that not all predictors relate similarly to different outcome measures, attention must be placed on the standardized and discreet assessment of varied predictors and outcome indexes.

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