Originals

F. Mayoral[1]
A. L. Montejo[2]
M. Bousoño[3]
M. A. González-Torres[4]
J. M. Olivares[5]
S. Ros[6]
J. Sanjuán[7]
R. Escobar[8]
N. Lara[9]

Quality of life and social functioning in schizophrenic patients treated with olanzapine: 1 year follow-up naturalistic study

[1] Complejo Hospitalario Carlos Haya
Málaga (Spain)
[2] Hospital Universitario de Salamanca
Salamanca (Spain)
[3] Universidad de Oviedo
Oviedo (Spain)

[4] Hospital de Basurto
Bilbao (Spain)
[5] Complejo Hospitalario Xeral-Cies
Vigo (Spain)
[6] Hospital del Mar
Barcelona (Spain)

[7] Universidad de Valencia
Valencia (Spain)
[8] Lilly, S.A.
Madrid (Spain)
[9] Group Health Outcomes Research Europe
Barcelona (Spain)

Objective. To measure health related quality of life (HRQL) and social functioning in schizophrenic patients treated with olanzapine under regular clinical practice conditions.

Methods. Out-patients diagnosed of schizophrenia and beginning treatment with olanzapine, quetiapine, risperidone or typical oral antipsychotics were included. Information on socio-demographic characteristics was obtained and in each visit (baseline, 3, 6 and 12 months) they were administered the generic HRQL questionnaire EuroQoL-5D and the Social Functioning scale (SFS).

Results. A total of 1,198 patients were followed-up for 12 months. Mean age (SD) was 38.6 (13.3) years and 62.9 % of them were men. In basal conditions the most affected dimensions of EQ-5D were anxiety/ depression (76 %), and daily activities (73.6 %). After 12 months treatment the cohort of patients treated with olanzapine showed a better HRQL in the self-care dimension compared to all other treatments (p < 0.05), and in the dimensions of pain/discomfort, anxiety/depression and usual activities compared to the group treated with quetiapine and risperidone (p < 0.05). The Visual Analogue scale (VAS) of the EQ-5D questionnaire showed a better health state after 12 months in the group treated with olanzapine compared to the groups of quetiapine or risperidone (p < 0.05). The Social Functioning scale showed a better improvement in the cohort of olanzapine in the three studied dimensions after 12 months: isolation and social relationships in comparison to the risperidone group (p < 0.05), interpersonal communication in comparison to the risperidone and quetiapine group (p < 0.05) and independence performance in comparison to all the other treatments (p < 0,05).

Conclusion. Schizophrenic patients treated with olanzapine for one year show a better improvement in HRQL and social functioning than those treated with other antipsychotics.

Key words:
Olanzapine. Quality of life. Social functioning. Schizophrenia.

Correspondence:
Rodrigo Escobar
Departamento Médico
Lilly, S.A.
Av. de la Industria, 30
28108 Alcobendas (Madrid) (Spain)
E-mail: escobar_rodrigo@lilly.com

Calidad de vida y funcionamiento social en pacientes con esquizofrenia en monoterapia con olanzapina: estudio naturalístico de 1 año de seguimiento

Objetivo. Evaluar la calidad de vida relacionada con la salud (CVRS) y funcionalidad social de los pacientes esquizofrénicos tratados en monoterapia con olanzapina en condiciones de práctica clínica habitual.

Método. Se reclutaron pacientes ambulatorios diagnosticados de esquizofrenia que iniciasen tratamiento en monoterapia con olanzapina, quetiapìna, risperidona o antipsicóticos típicos orales. Se recogieron las variables sociodemográficas del paciente. En cada visita (basal, 3, 6, 12 meses) se administró el cuestionario genérico de CVRS EuroQoL-5D y la escala de Funcionamiento Social.

Resultados. Se siguieron un total de 1.198 pacientes. La edad media (DE) era de 38,6 (13,3) y un 62,9 % era hombres. Según el cuestionario EQ-5D basalmente las dimensiones más afectadas fueron ansiedad/depresión (76 %) y actividades cotidianas (73,6 %). A los 12 meses la cohorte tratada con olanzapina presentó una mejor CVRS en la dimensión de cuidado personal respecto al resto de tratamientos (p < 0,05) y un porcentaje menor en las dimensiones de dolor/malestar, ansiedad/depresión y actividades habituales respecto al grupo tratado con quetiapina o risperidona (p < 0,05). Según la EVA del cuestionario EQ-5D la cohorte tratada con olanzapina presentó mejor estado de salud a los 12 meses que los tratados con quetiapina o risperidona (p < 0,05). La escala de Funcionamiento Social demostró una mejora a los 12 meses en los pacientes tratados con olanzapina en las tres dimensiones estudiadas: aislamiento y relaciones sociales respecto a los tratados con risperidona (p < 0,05), comunicación interpersonal respecto a los tratados con risperidona o quetiapina (p < 0,05) e independencia ejecución respecto al resto de tratamientos (p < 0,05).

Conclusión. La mejora en la CVRS y funcionamiento social al año de seguimiento es mayor en aquellos pacientes tratados con olanzapina que con otros antipsicóticos.

Palabras clave:
Olanzapina. Calidad de vida. Funcionamiento social. Esquizofrenia.

INTRODUCTION

Schizophrenia is a serious psychiatric condition with a worldwide prevalence of approximately 5.5 per one thousand inhabitants[1], although great variability is detected between regions[2]. The first manifestations of the disease generally occur in late adolescence or the first years of the adult life. The disease course varies greatly, total recovery occurring in very few cases. Thus, it mostly occurs as a chronic disease associated to significant social, psychological and functional dysfunctions for the patient[3,4].

One of the main objectives of schizophrenia treatment should be to optimize the patient's functionality and quality of life to a maximum. The measure of quality of life has recently become important in the field of investigation in schizophrenia, its role in the assessment of the impact of the disease and its treatment in the patient's well being being recognized[5].

Several randomized clinical trials (RCT) indicate that treatment with olanzapine is associated with improvement in health related quality of life (HRQL) and a lower or equal use of the health care resources than other antipsychotics[6–8]. However, because of the experimental conditions in which the RCT are developed, their conclusions cannot always be extrapolated to all the patients since very strict screening criteria of the patients and investigators are established. This restricts the generalization of their conclusions[9]. This fact is especially certain in diseases such as schizophrenia since most clinical trials with antipsychotics exclude those patients with underlying organic diseases, with other mental disorders and patients treated concomitantly with several antipsychotics[10,11].

On the contrary, observational studies and those on health results are characterized because they try to determine the effects of health care interventions when they are used in the common conditions of the clinical practice[12]. If the clinical trials are oriented towards evaluating clinical variables, studies on the investigation of results are also focused on the study of other types of variables that also have a great interest for both physicians and patients (quality of life, satisfaction with the treatment or treatment compliance).

There are examples of observational studies that have evaluated olanzapine safety and effectiveness under common conditions of clinical practice[13-15], however, information on some health care results related with patient functioning such as the HRQL is still scarce.

This present study aims to study HRQL and functionality of patients treated in monotherapy with olanzapine compared to other antipsychotics at 12 months of follow-up, under common clinical practice conditions.

MATERIAL AND METHODS

The present study forms a part of the Schizophrenia Outpatient Health Outcomes study (SOHO)[16,17]. This is a prospective, observational study of 3 years follow-up conducted in 10 European countries in which more than 10,000 patients have participated. Its objective is to assess several health care results associated to olanzapine versus other antipsychotics in schizophrenic patients receiving out-patient treatment. Additional details on the study criteria and main results have already been previously published[16,17]. The results of the present study correspond to the sub-sample of patients from the SOHO study enrolled in Spain, treated with a single antipsychotic drug, and the results of one year of follow-up are presented.

Study design

Observational, multicenter, perspective, non-interventionists and open label study.

Study scope and population

The study was conducted in out-patient centers of all the Spanish geographical area. Study population were out-patient schizophrenics who, according to clinical opinion, would need to initiate or change the antipsychotic treatment. They were distributed into two cohorts: olanzapine and other antipsychotics. Given the elevated sample and diversity of treatments administered in the group of other treatments, this was divided into three groups: quetiapine, risperidone and typical oral antipsychotics (TOA).

Sample selection

Patients diagnosed of schizophrenia according to DSM-IV and ICD-10 criteria, older than 18 years, who initiated or changed their antipsychotic treatment and allowed for long term evaluation were selected. Investigators were instructed to make their therapeutic decisions independently of the study and then evaluate if the patients fulfilled the screening criteria.

«Initiation» of antipsychotic medication refers to patients without previous antipsychotic treatment; that is, whose first administration is done in the beginning of the study and «change» to patients who were already in treatment with antipsychotics that were substituted with a new one. Both patients who changed treatment and those who initiated treatment with antipsychotics were included in the study since it was considered that the comparison of the results between cohorts at one year of follow-up would be totally independent of the baseline value.

All the patients should be treated with a single antipsychotic drug during the follow-up. The patients gave their written consent to participate in the study.

Data collection

After the baseline visit, a visit was conducted at 3 months, 6 months and one year. Data collection was conducted during the follow-up visits without intervening in the normal course of the disease care. Baseline data were collected on sociodemographic (age, gender, site or type of residence, present work situation, civil status and social activity), clinical, treatments received, HRQL and social functioning data.

In regards to treatment, the antipsychotic treatment that the patient took before the baseline visit and the antipsychotic medication prescribed at this time were obtained. In this way, it was possible to know the change made in the therapy and the reason for the change (lack of efficacy, intolerance, non-compliance or patient's desire). In every case, the name of the antipsychotic and total daily dose were recorded.

The generic questionnaire EuroQoL-5D (EQ-5D)[18] was used to measure the HRQL. This questionnaire has a descriptive system and Visual Analogue Scale (VAS) for the self-evaluation of the health state. The EQ-5D descriptive system contains a description of the health condition in five dimensions (mobility, self-care, daily activities, pain/malaise, and anxiety/depression), each one of which has three levels of seriousness: *a)* without problems; *b)* some/moderate problems, and *c)* many problems. The VAS is a vertical and millimetric scale in form of a thermometer with extreme scores of 0 (worse imaginable health condition) and 100 (best imaginable health condition). This self-administered questionnaire was chosen as it is a generic instrument that has been widely validated in the Spanish population, it is short and has demonstrated validity to detect the differences in the HRQL between patients with different intensity grades in their schizophrenia[19] and because it has population reference values[20].

Social functioning of schizophrenic patients was assessed with the Social Functioning Scale (SFS)[21]. This evaluates those functioning areas that are crucial for maintenance of the relationship of schizophrenic patients with the community. It is made up of seven dimensions. However only three of these areas were included in this study: social relationships/isolation (SR), interpersonal communication (IC) and independence/performance (IP). The SR scale is made up of five items with a maximum score of three per item and minimum of 0, which makes a total maximum of 15 and minimum of 0. The IC scale is made up of four items, however items 1 and 2 have been combined, the total maximum score being 9 and minimum 0. Finally, calculation was done in the same way for the IP scale, adding the score from 0 to 3 of the 123 items making it up. The final score of each dimension was transformed according to the corresponding algorithm adapted to the spanish version of the scale. Maximum and minimum scores for each dimension were: SR (57.5 to 133), IC (55 to 145) and IP (53 to 145). The dysfunction is greater the lower the score on the scale.

Data analysis

A descriptive analysis of the sociodemographic characteristics of all the sample was made.

The percentage of patients with problems (some problems or many problems) was calculated in each one of the descriptive system dimensions of the EQ-5D questionnaire to analyze the course of the HRQL of the patients with schizophrenia. Percentage of patients without any problem in any of the dimensions, which corresponds to a perfect health condition (1,1,1,1,1), was also analyzed.

The differences in the percentage of patients with problems in the descriptive system dimensions and with a perfect health condition between study groups at 12 months of follow-up were analyzed with the chi square test. Evolution of the VAS between study groups was analyzed with a general linear model of repeated measurements and one factor.

To quantify the differences obtained in the VAS during the follow-up by study cohorts, change in the scores regarding initial value was calculated and compared between study groups with the variance analysis using the Scheffé test for post-hoc comparison of means.

Finally, in regards to social functioning, a descriptive analysis was conducted on evolution for each visit and study group of each one of the dimensions making it up as well as of the differences in the scores. Evolution was compared with an analysis of the variance to compare the score difference obtained between cohorts.

All the data analysis was done with SAS 8.02 for Windows. Significance level $\alpha = 0.05$ was used in all the tests and statistical tests.

RESULTS

Initially, a total of 1,655 patients were included in antipsychotic monotherapy, 1,198 of whom completed the 12 months of follow-up. Previously 364 patients who took other antipsychotics were excluded as they were in groups having very low number (fig. 1). The participating sites mostly corresponded to public centers (63.8 % with 32.2 % having agreements) located in urban centers (815). Out of the 457 patients who did not finish the study, 237 abandoned treatment and 220 did not come to any of the four visits.

Table 1 shows the main sociodemographic characteristics of the patients, demonstrating the homogeneous distribution of age, gender and age on the first consultation between the different treatment groups. Differences were detected in age of the patients between gender, the women being slightly older than the men both at the onset of the study as well as age of first consultation.

In regards to the treatment, 26.3 % of all the patients did not take antipsychotic medication prior to the study onset and 59 % took only one antipsychotic drug. Among the patients who received previous treatment, the change in antipsychotic drug was mostly due to lack of total or partial effectiveness of the previous medication (59.5 %), followed by intolerance (39.9 %) or desire of the patient to change the antipsychotic medication (31.8 %). Figure 1 shows the distribution of the patients by antipsychotic treatment groups in monotherapy and the proportion of patients in each group who continued in the study during the entire follow-up year. It stands out that 76 % of the patients who initiated treatment with olanzapine continued with the same treatment at the end of one year.

Table 2 shows the percentage of patients with problems detected in each visit and by treatment cohorts for each
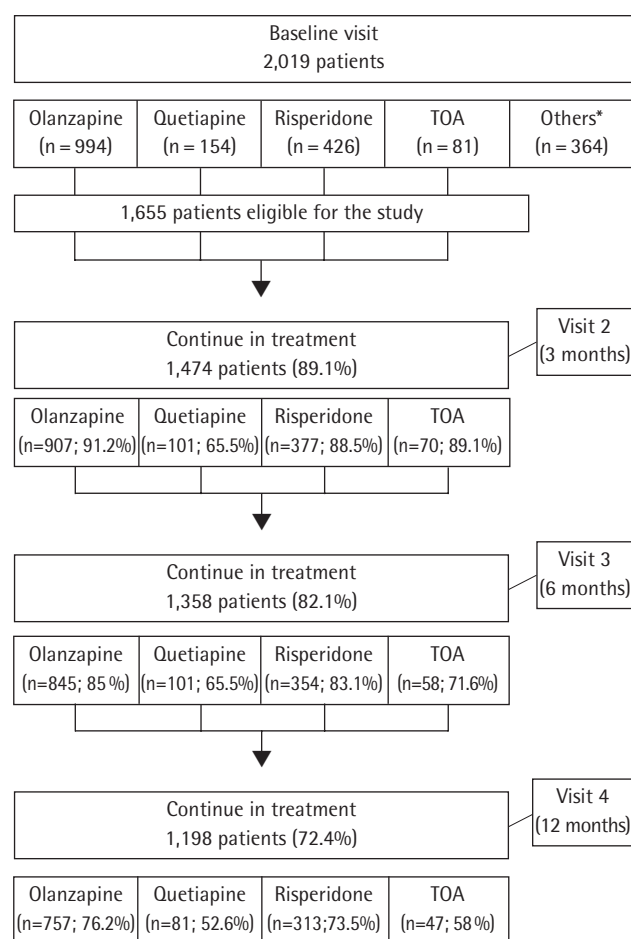
one of the EQ-5D questionnaire dimensions. Basally, the patients mostly had problems in the anxiety/depression (76 %) and daily activities (73.6 %) dimensions. The 13.9 % of the patients who were incapable of performing usual activities such as working, studying or doing house work and the 18.9% who were extremely anxious and depressed in the baseline visit stand out.

The most affected dimensions of the EQ-5D questionnaire in all the treatment cohorts at 12 months of follow-up continued to be daily activities and anxiety /depression. Patients of all the cohorts improved in the area of anxiety /depression at 12 months of treatment, it being observed that the decrease in the proportion of patients affected was greater in the olanzapine treated cohort.

Differences were observed in the dimension of self-care when the proportion of patients affected in each dimension, on the fourth visit and according to treatment group was compared. A lower percentage of patients with problems between the patients who initiated therapy with olanzapine was observed (p < 0.05). In the same way, differences were obtained in the percentage of patients with problems in the dimensions of: usual activities, pain/malaise and anxiety/depression (p < 0.05) in the olanzapine group versus the quetiapine and risperidone groups.

Figure 2 shows how the proportion of patients in health condition (1,1,1,1,1) was greater at 12 months in the olanzapine or TOA treated group versus quetiapine or risperidone.

According to the VAS of the EQ-5D questionnaire, mean score (SD) of the health condition of the patients when initiating the study was 49.2 (18.3), far from a good health condition, this reaching 67 (17.14) at the end of the follow-up. Figure 3 shows the evolution of this variable, indicating significant improvement in all the study groups after the second visit.

When the change in the VAS score at 12 months of follow-up was compared regarding the baseline value, it was observed how the scores increased a median of 20 points with olanzapine versus quetiapine, risperidone and TOA that increased 13, 18 and 14 points respectively, indicating a better health condition.

At 12 months, the patients treated with olanzapine showed a better health condition regarding those treated with quetiapine or risperidone (p < 0.05).

In regards to the Social Functioning scale, the isolation and social relations (SR) dimension experienced improvement in all the groups. A greater increase in the final scores versus the baseline value between the patients treated with olanzapine compared to those treated with risperidone stands out, the increase being 9.3 (14.4) and 6.5 (13.5) points respectively. No significant differences were observed between groups at the end of one year of follow-up.

Figure 1 | *Number of patients in monotherapy included in each antipshychotic treatment cohort: proportion of patients who continued with the same treatment in each follow-up visit. TOA: typical oral antipsychotics. *Other treatments that are not included as groups having very low number remained.*

| Table 1 | Socio-demographic characteristics of the complete sample |

	Olanzapine	Quetiapine	Risperidone	TOA	Total
Age					
Mean	38.4	38.9	38.8	40	38.6
SD	13.6	11.4	12.0	14.6	13.3
Valid N	978	153	413	78	1.622
Age a first consultation					
Mean	27.9	27.4	27.9	28.9	27.9
SD	10.6	9.4	9.7	10.9	10.3
Valid N	955	146	409	80	1.590
% men	64%	57.8%	63.6%	53.1%	62.8%

	n	%	n	%	n	%	n	%	n	%
With partner	258	26	46	29.9	101	23.7	25	30.9	430	26
Independ. residence	426	42.9	67	43.5	171	40.1	40	49.4	704	42.5
Depend. residence	488	49.1	80	51.9	219	51.4	32	39.5	819	49.5
Supervised residence	64	6.4	7	4.5	24	5.6	8	9.9	103	6.2
Hospitalized	5	0.5	–	–	1	0.2	–	–	6	0.4
Homeless	3	0.3	–	–	4	0.9	–	–	7	0.4
Others	5	0.5	–	–	4	0.9	1	1.2	10	0.6
With paid employment	175	17.6	24	15.6	83	19.5	17	21.0	299	18.1
With unpaid employment	47	4.7	2	1.3	11	2.6	3	3.7	63	3.8
Unemployed but available to work	235	23.6	33	21.4	111	26.1	22	27.2	401	24.2
Unemployed and not available	164	16.5	23	14.9	59	13.8	18	22.2	264	16.0
Retired	235	23.6	36	23.4	106	24.9	14	17.3	391	23.6
Others	134	13.5	36	23.4	56	13.1	7	8.6	233	14.1

P (age): 0.53; p (age first consultation): 0.723; p (gender): 0.124; TOA: typical oral antipsychotics.

The Interpersonal Communication (IC) dimension of the Social Functioning scale showed significant improvement in all the study groups. The change observed between the baseline visit and the visit at 12 months of follow-up was statistically significant between study groups. It showed a superior improvement in the patients who initiated olanzapine versus those who initiated treatment with quetiapine or risperidone.

Finally the behavior of the Independence/performance (IP) dimension was different from the other dimensions, observing noticeable differences between study groups after the first six months. In this way, the four cohorts improved in the score of the IP dimension, however statistically significant differences were observed in the change of scores between study groups. Thus olanzapine experienced a significant improvement regarding the remaining treatments. Figure 4 shows the evolution of the scores of the three dimensions of social function in the 12 months of follow-up according to treatment.

DISCUSSION

The study of HRQL and social functioning of the patient diagnosed of schizophrenia has taken on greater relevance since the patients were deinstitutionalized in the 1980's. If it is true that the so-called atypical antipsychotics have demonstrated their efficacy in the control of the symptoms of schizophrenia, it is still necessary to assess the differences between them in the impact of quality of life and social functioning of the patient[22].

The present study has made it possible to study the impact of the treatment of schizophrenic patients in their HRQL and social functioning at 12 months of follow-up, especially focusing on the improvements obtained with olanzapine monotherapy. The study's observational design has made it possible to assess the patient in usual clinical practice conditions and with a relatively long follow-up period, on the contrary to that occurring in the RCT, in

Table 2	Proportion of patients affected in each one of the EQ-5D dimensions in the different study visits by antipsychotic treatment cohort									
		Olanzapine		Quetiapine		Risperidone		TOA		Total
		n	%	n	%	n	%	n	%	n	%
Mobility											
Baseline		255	33.68	29	35.80	113	36.10	15	31.91	412	34.39
3 months		139	18.36	17	20.98	77	24.60	15	32.60	248	20.71
6 months		118	15.60	15	18.51	64	20.44	11	23.40	208	17.37
12 months		106	14.05	16	19.75	53	16.98	11	23.91	186	15.59
Self-care											
Baseline		352	46.62	36	44.44	147	46.96	17	36.17	552	46.15
3 months		233	30.81	25	30.86	111	35.46	10	21.17	379	31.66
6 months		192	25.46	24	30	101	32.26	7	14.89	324	27.13
12 months		179	23.77	21	25.92	103	32.90	13	27.65	316	26.46
Daily activities											
Baseline		569	75.26	60	74.07	223	71.24	29	61.70	881	73.60
3 months		427	56.55	51	62.96	175	56.08	23	48.93	676	56.56
6 months		341	45.28	44	54.32	158	50.47	17	36.17	560	46.90
12 months		290	38.56	22	51.85	145	46.32	17	36.17	2494	41.40
Pain/malaise											
Baseline		331	43.72	32	40	130	41.53	23	48.93	516	43.10
3 months		183	24.27	23	28.39	86	27.56	14	29.78	306	25.62
6 months		144	19.07	20	25	63	20.32	9	19.56	236	19.81
12 months		119	15.84	20	25	79	25.23	10	21.27	228	19.14
Anxiety/depression											
Baseline		593	78.43	59	73.75	229	73.16	28	59.57	909	76
3 months		392	51.92	42	51.85	180	157.69	21	44.68	635	53.13
6 months		302	40	39	49.36	152	48.56	17	36.17	510	42.71
12 months		259	34.39	42	51.58	140	44.87	15	31.91	456	38.22
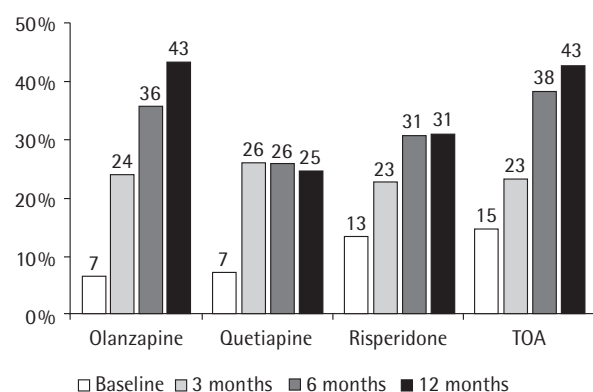
TOA: typical oral antipsychotics.

which the follow-up is generally short. Furthermore, the design has made it possible to include a large amount of patients, without being restricting to the strict enrolment criteria required by clinical trials, thus increasing the external validity of the study. In most of the RCT with antipsychotics, patients with organic or associated psychiatric diseases are excluded, especially those with abuse disorders or substance dependence, very prevalent among the schizophrenic population.

The sociodemographic characteristics of the patients included in the study coincide with the expected profile according to other studies of patients with schizophrenia treated as out-patients in Spain. This favors the comparability of the results[13]. The fact that only 18 % of them had paid employment and 74 % had no partner may be a sample of the stigma these patients still suffer[23,24].
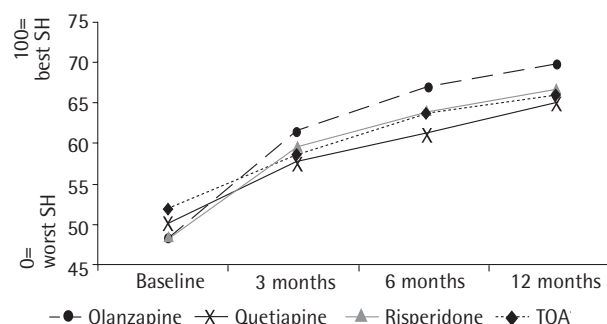
Figure 3 | *Evolution of the results of the VAS of the EQ-5D according to treatment group. TOA: typical oral antipsychotics.*

For most of the patients, treatment on initiation was an atypical antipsychotic, although this information should not be surprising since atypical antipsychotics are used more frequently than typical antipsychotics to treat schizophrenia in Spain.

Of all the patients included in the study, it stands out that the cohort that followed treated with olanzapine maintained the same treatment at 12 months with greater proportion than in the rest of the cohorts. This point is important since it is known that continued maintenance of treatment is a crucial factor in the control of the schizophrenic patients. This permits the patient to benefit from another type of psychosocial interventions aimed at their integration in the community. These would be difficult to perform if the patient's symptoms were not controlled by the medication.

One of the objectives of the study was to compare the changes in HRQL of the schizophrenic patient after one year of follow-up and by treatment group. The high percentage of schizophrenic patients with problems in the anxiety/depression dimension, this dimension remaining as that affected by the greatest percentage of patients at one year of follow-up, stands out in the baseline assessment of the HRQL according to the EQ-5D questionnaire. These data agree with those obtained in previous studies, which identify depression as a determining factor in the poor quality of life of the schizophrenia patient[25-28]. In this way, as other authors have already done[29], we can note that an early therapeutic intervention aimed not only at psychotic symptoms but also at mood state disorders such as anxiety/depression should be of priority to improve the patient's quality of life.

When the proportion of patients affected by anxiety/depression at 12 months of follow-up was compared, it was observed how the proportion of patients affected in the group treated with olanzapine was significantly lower than in the group of quetiapine or risperidone treated patients. In addition, the decrease in the proportion of patients affected in this dimension at baseline and at 12 months was greater in the olanzapine treated patient cohort than in any other cohort. This information points to the fact that, although measured with a generic scale, olanzapine affects the pa-
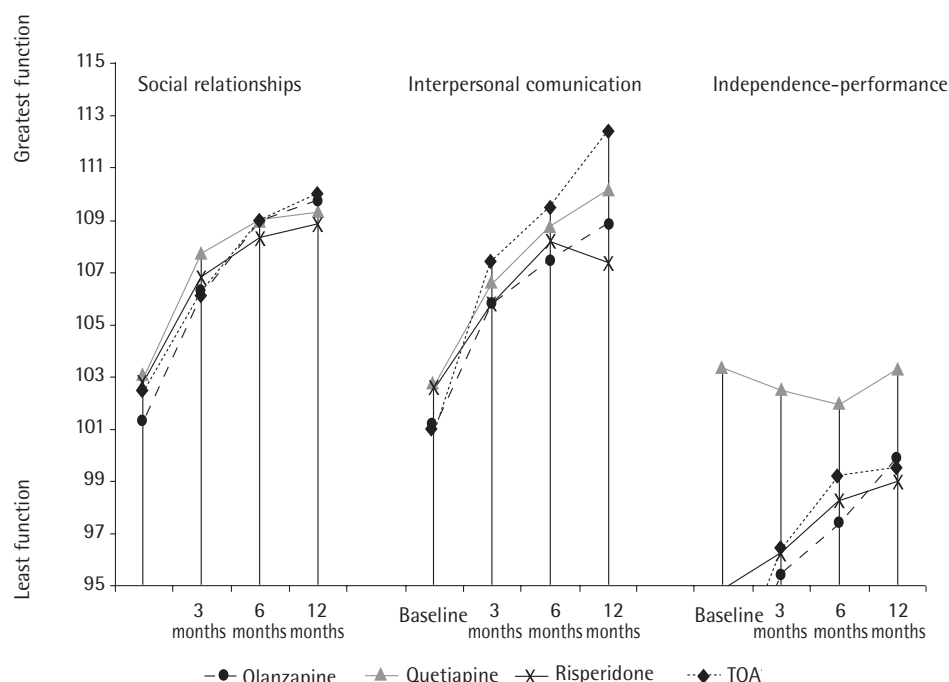

Figure 4 | *Evolution of the scores of the sub-scales studied of the Social Functioning scale. TOA: typical oral antipsychotics.*

tient's depression, which, as has already been commented on, is a clear determining factor of his/her quality of life.

Olanzapine has also been demonstrated to improve the patient's HRQL in the dimensions of usual activities and pain/malaise, showing a lower percentage of affected patients at one year of treatment regarding those treated with quetiapine or risperidone, as has already been seen in previous studies[7,13,14].

It was considered that those patients without problems in any of the dimensions of the descriptive system of the EQ-5D had a perfect state of health. In this case, those patients who were treated with olanzapine once again had a greater percentage of patients with a perfect state of health at 12 months of follow-up than those treated with quetiapine or risperidone. These results agree with those of previous studies in which improvement of HRQL has been demonstrated in those patients treated with olanzapine versus risperidone[7,30] or haloperidol[6,8,31-34].

The general scores provided by VAS of the EQ-5D indicate poor subjective perception of health when comparing the results with those provided by the general population and other patient groups[20]. The mean values of the score varied from 0.87 to 0.89 for a sample of general Spanish population while it went from 49 initially to 67 at the end of the follow-up for the study population.

In this study, the Social Functioning scale (SFS), specifically the dimensions of isolation/social relationships (SR), interpersonal communication (IC) and independence/performance (IP), was used to assess the social functioning grade of the patients by treatment group. The three dimensions showed clear improvement in the four study groups at one year of follow-up, although the olanzapine treated patients had a greater increase of the final score in the SR and IC dimensions versus those treated with quetiapine or risperidone. In the IP dimension, a significant difference was already observed between cohorts after the first six months, so that the olanzapine treated group experienced a significant improvement regarding the remaining treatments. As other authors have indicated, improvement of the patient's social function is a determining factor to help improve the stigma problem suffered by schizophrenia patients[35].

A generic measurement has been used in this study to measure the HRQL in this study. This could be considered as a methodological limitation, supposing that the results could vary when using one of the specific scales for schizophrenia. There are studies that have been conducted with specific scales to measure the HRQL of schizophrenic patients[36] that support the same results, showing a significant improvement of the HRQL in the olanzapine treated patients[7].

In conclusion, the study results show an improvement in the HRQL of the patient treated in monotherapy with olan-

zapine at 12 months of follow-up compared with those treated with quetiapine, risperidone and TOA. Improvement in the subscales of IC, SR and IP of the Social Functioning scale has also been demonstrated in those patients treated with olanzapine.

Further studies are needed to known the health results under longer term common clinical practice conditions and to identify the determining factors of HRQL of the schizophrenia patients and thus be able to design community interventions of improvement.

REFERENCES

1   Johannessen JO. Review: lifetime prevalence of schizophrenia and related disorders is about 5.5 per 1,000, but there is significant variation between regions. Can J Psychiatry 2002;47:833-43.

2. Goldner EM, Hsu L, Waraich P, Somers JM. Prevalence and incidence studies of schizophrenic disorders: a systematic review of the literature. Evid Based Ment Health 2003;6:74.

3   Carpenter WT, Buchanan RW. Medical progress: schizophrenia. N Engl J Med 1994;330:681-90.

4. Chan S, Yu Iu W. Quality of life of clients with schizophrenia. J Adv Nurs 2004;45:72-83.

5   Awad AG, Voruganti LNP, Heslegrave RJ. Measuring quality of life in patients with schizophrenia. Pharmacoeconomics 1997; 11:32-47.

6. Revicki DA, Genduso LA, Hamilton SH, Ganoczy D, Beasley CM Jr. Olanzapine versus haloperidol in the treatment of schizophrenia and other psychotic disorders: quality of life and clinical outcomes of a randomised clinical trial. Qual Life Res 1999;8:417-26.

7. Gureje O, Miles W, Keks N, Grainger D, Lambert T, McGrath J, et al. Olanzapine vs risperidone in the management of schizophrenia: a randomised double-blind trial in Australia and New Zealand. Schizophr Res 2003;61:303-14.

8. Dennis A. Revicki, Laura A. Genduso, Susan H. Hamilton, Dara Ganoczy, Charles M. Beasley Jr. Olanzapine versus haloperidol in the treatment of schizophrenia and other psychotic disorders: quality of life and clinical outcomes of a randomized clinical trial. Qual Life Res 1999;8:417-426.

9. Rothwell PM. Can overall results of clinical trials be applied to all patients. Lancet 1995;345:1616-9.

10. Beasley CM, Tollefson G, Tran P, et al. Olanzapine versus placebo and haloperidol: acute phase results of the North American double-blind olanzapine trial. Neuropsychopharmacology 1996; 14:111-23.

11. Tran PV, Hamilton SH, Kuntz AJ, Potvin JH, Andersen SW, Beasley C, et al. Double blind comparison of olanzapine versus risperidone in the treatment of schizophrenia and other psychotic disorders. J Clin Psychopharmacol 1997;17:470-18.

12. Badia X, del Llano J. Health outcomes research. Med Clin (Barc) 2000;114(Suppl. 3):1-7.

13. Gómez JC, Sacristán JA, Hernández J, Breier A, Ruíz Carrasco P, Antón Saiz C, et al, for the EFESO Study Group. The safety of olanzapine compared with other antypsychotic drugs: results of an observational prospective study in patients with schizophrenia (EFESO study). J Clin Psychiatry 2000;61:335-343.

14. Voruganti L, Cortese L Owyeumi L, Kotteda V, Cernovsky Z , Zirul S, et al. Switching from conventional to novel antipsychotic drugs: results of a prospective naturalistic study. Schizophr Res 2002;1;57:201-8.

15. Cuesta JM, Peralta V, Zarzuela A. Effects of olanzapine and other antipsychotics on cognitive function in chronic schizophrenia: a longitudinal study. Schizophr Res 2001;48:17-28.

16. Haro JM, Edgell ET, Jones PB, Alonso J, Gavart S, Gregor KJ, et al, on behalf of the SOHO Study Group. The European Schizophrenia Outpatient Health Outcome (SOHO) study: rationale, methods and recruitment. Acta Psychiatr Scand 2003;107:222-32.

17. Haro JM, Edgell ET, Frewer P, Alonso J, Jones PB, SOHO Study Group. The European Schizophrenia Outpatiens Health Outcomes Study: baseline findings across country and treatment. Acta Psychiatr Scand Suppl 2003;416:7-15.

18. The EuroQoL Group. EuroQoL a new facility for the measurement of health related quality of life. Health Policy 1990;16:199-208.

19. Prieto L, Sacristán JA, Ormaechea JA, Gómez Jc. Euroqol 5D (a generic health-related quality of life measure): psychometric validation in a sample of schizophrenic patients. Eur Neuropsychopharmacol 2002;12:300.

20. Badia X, Roset M, Montserrat S, Herdman M, Segura A. La versión española del EuroQoL: descripción y aplicaciones. Med Clin 1999;112(Suppl. 1):79-85.

21. Torres A, Olivares JM. Validación en castellano de la Social Functioning Scale (escala de Funcionamiento Social). Actas Esp Psiquiatr 2005;33:216-20.

22. Collaborative Working Group on Clinical Trial Evaluations. Measuring outcome in schizophrenia: differences among the atypical antipsychotics. J Clin Psychiatry 1998;59(Suppl. 12).

23. Lee S, Lee MT, Chiu MY, Kleinman A. Experience of social stigma by people with schizophrenia in Hong Kong. Br J Psychiatry 2005;186:153-7.

24. Angermeyer MC, Beck M, Dietrich S, Holzinger A. The stigma of mental illness: patients' anticipations and experiences. Int J Soc Psychiatry 2004;50:153-62.

25. Ristner M, Farkas H, Gibel A. Satisfaction with quality of life varies with temperament type patients with schizophrenia. J Nerv Ment Dis 2003,191:668-74.

26. Bechdolf A, Klosterkotter J, Hambrecht M, Knost B, Kuntermann C, Schiller S, Pukrop R. Determinants of subjective quality of life in post acute patients with schizophrenia. Eur Arch Psychiatry Clin Neurosci 2003;253:228-35.

27. Reine G, Lanchón C, Di Tucci S, Sapin C, Auquier P. Depression and subjective quality of life in chronic phase schizophrenic patients. Acta Psychiatr Scan 2003;108:297-303.

28. Jarema M, Konieczynska Z, Murawiec S, Szafranski T, Szaniawska A. The change of quality of life and clinical picture in schizophrenia. Psychiatr Pol 2002;36:393-402.

29 Tollefson GD, Andersen SW. Should we consider mood disturbance in schizophrenia as an important determinant of quality of life? J Clin Psychiatry 1999,60(Suppl. 5):23-30.

30. Ritchie CW, Chiu E, Harrigan S, May K, Hassett A, Macfarlane s, et al. The impact upon extra-pyramidal side effects, clinical symptoms and quality of life of a switch from conventional to atypical antipsychotics (risperidone or olanzapine) in elderly patients with schizophrenia. Int J Geriatr Psychiatry 2003;18:432-40.

31. Hamilton SH, Edgell ET, Revicki DA, Breier A. Functional outcomes in schizophrenia: a comparison of olanzapine and haloperidol in a European sample. Int Clin Psychopharmacol 2000;15: 245-55.

32. Hamilton SH, Revicki DA, Genduso LA, Besley CM. Olanzapine versus placebo and haloperidol: quality of life and efficacy results of the North American double-blind trial. Neuropsychopharmacology 1998;18:41-9.

33. José Manuel Montes, Antonio Ciudad, Josep Gascón, Juan Carlos Gómez, EFESO Study Group. Safety, effectiveness and quality of life of olanzapine in first-episode schizophrenia: a naturalistic study. Prog Neuropsychopharmacol Biol Psychiatry 2003; 27:667-74.

34. Franz M, Lis S, Plüddemann K, Gallhofer B. Conventional versus atypical neuroleptics: subjective quality of life in schizophrenic patients. Br J Psychiatry 1997;170:422-5.

35. Villares C, Sartorius N. Challenging the stigma of schizophrenia. Rev Bras Psiquiatr. 2003;25:1-2.

36. Heinrichs DW, Hanlon Te, Carpenter Wt Jr. The Quality of Life Scale: an instrument for rating the schizophrenic deficit syndrome. Schizophr Bull 1984;10:388-98.