

DOES RISPERIDONE LONG ACTING INJECTABLE DEPOT (RLAI) REDUCE NUMBER OF ADMISSIONS TO HOSPITAL

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SUMMARY

Background: Adherence to treatment is a major issue in relapse prevention in schizophrenia. Injectable depot has been claimed to improve non-adherence. A study in the North of England has shown that risperidone long acting injectable form has reduced number of admissions and number of days stayed in hospital. Our study aimed to replicate the previous study in the South of England.

Methods: A retrospective study was conducted in the South Essex Foundation University NHS trust. We selected every fifth patient on the Hospital Pharmacy list for risperidone long acting injectable (RLAI). We collected information on. Age, sex, diagnosis and medication ,regular follow up, investigation of each patient which included weight, FBS, S. lipid and hormones at the start of treatment, at three months and six months intervals. We recorded reasons for starting RLAI. Number of antipsychotics prescribed before RLAI, illness duration, number of admissions and days stayed in hospital in each episode before and after RLAI. Patients were included if they stayed for one year or on RLAI.

Results: We reviewed 65 case notes. The most common reason for starting RLAI was non compliance. 80% of our sample had the illness for more than five years. Half of them had physical morbidity. After RLAI was commenced there was a significant association with number and length of admissions.

Conclusions: We have found an association between prescription of RLAI and reduction in number and length of admission. This needs to be confirmed in a randomised controlled trial.

Key words:

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INTRODUCTION

Schizophrenia is a relapsing and remitting severe mental illness. Without medication the two year relapse rate is estimated at 96% (Gitlin 2001). There is also evidence that relapse induces chronicity and every relapse is more difficult to treat than the one before.

Noncompliance with medication is a major problem in patients with schizophrenia and is associated with relapses and poor outcome (Gitlin 2001, Acosta 2008, Davies 1994). Compliance with oral medication is particularly problematic (Thornly 1998, Young 1996). Depot medication is known to improve control over dose adjustments, more predictable and consistent plasma drug concentration, improved adherence and consequently lower rates of relapse and better outcome (Adams 2001, Kane 1998). On the other hand, oral and depot conventional antipsychotics oral and depot are associated with specific side effects which affects long term compliance and outcome (Adams 2001).

The atypical antipsychotics have an improved side effects profile compared to conventional antipsychotics. Risperidone long acting injection (RLAI) was introduced in 2001 as the first atypical long acting injection. Its efficacy and tolerability was demonstrated by randomized clinical trails (RCT) (Chue 2005, Turner 2004).

A study in the North of England (10) has shown that risperidone long acting injectable form has reduced the number of admissions and the number of days stayed in hospital by patients. Our study aimed to replicate the previous study in the South of England.

METHODS

The study was conducted within the west part of South Essex University Foundation NHS Trust, an area covering Thurrock, Basildon, Brentwood, Billericay and Wickford. It is around 300 000 population semirural area which is generally affluent with pockets of deprivation.

Appropriate ethical approval was granted.

The list of patients who started on RLAI since its launch in 2002 until 2008 was obtained from the Basildon Hospital Pharmacy list for RLAI. Every fifth patient aged 17 to 65 years on the register and who have been on RLAI for a minimum of one year was selected. A proforma was designed to collect information including the following: Age, sex, diagnosis and medication, number of antipsychotics before RLAI, patients who had two antipsychotics with adequate doses for six weeks or more without any response were considered as treatment resistant schizophrenia (TRS). Alcohol and drug misuse, and reasons for starting RLAI were recorded, as were. number of antipsychotics before RLAI, and number of years since diagnosis, number of admissions and days stayed in each episode before and after RLAI. The period of patients on RLAI was calculated and an equal time before the patients was on RLAI was identified. Thence a mirror image analysis, was carried out. In patients who were started on RLAI as inpatients, their period on RLAI was calculated from the date of discharge. Patients who were transferred to other wards, such as high dependency, forensic and rehabilitation

wards during or after the patients and were started on RLAI were excluded as these admissions led to long inpatient stays which would have produced bias in the study because these admissions dealt with other aspects of patients management rather than acute relapse.

The total number of admission and total number of days whilst the patient on RLAI was calculated and the total number of admissions and total number of days for exactly the same period the patient was on RLAI was calculated before the patient was started on RLAI and a comparison was done between these two periods. Mirror image analysis was done for the period pre and post RLAI to determine whether RLAI has reduced number of admissions and number of days stayed in hospital.

The comparison of number of admissions and number of days of in-patient care during the previous treatment and RLAI treatment periods was analysed by using the paired t-test. Between groups, continuous variables were analysed by using the independent t-test and for categorical data, the chi-squared test.

RESULTS

65 medical notes were reviewed. 8 patients were excluded as RLAI treatment was less than a year. 43 were males and 14 were 14 females. The mean age was 42 years. Majority were chronic, 80% more than 5 years and 50 % were more than 10 years. Table 1 shows socio-demographic characteristics of patients in this study.

22% of patients stopped RLAI in the index period.

Total number of antipsychotics range were 2-8 and mean was 3.74, atypical antipsychotics range was (0-3) and mean was 1.46.

All patients had more than two antipsychotics before RLAI (mean number of all antipsychotics was 4.48, which makes them technically treatment resistant schizophrenia).

Table 1. Sociodemographic characteristics of patients

Patients characteristics	Total RLAI	%
Males	43	75
Mean Age	39	75
Female	14	25
Mean Age	42	25
Marital Status		
Single	44	77.2
Married	4	7.2
Divorced	6	10.5
Widowed	1	1.8
Unknown	2	3.6
No. antipsychotics preceding RLAI	3.75	
Co-morbid physical conditions	29	49.18
Average dose RC	40 mg	
Average no. previous meds	3.661017	
Psychiatric history		
Over 10 years	33	50.77
5-10 years	21	32.31
1-5 years	11	16.78

Table 2. Number of admission

Hospitalization	Pre-switch	Post-Switch	Statistical significance
Average No. of Admissions	2.23	1.04	P<0.000
Average hospital Stays stayed as inpatient	164.80	83.89	P<0.000

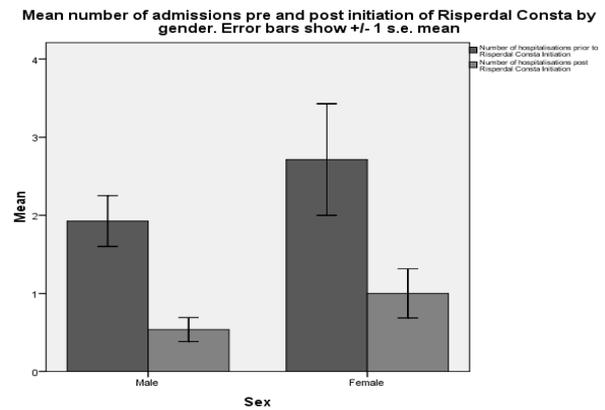


Figure 1. Number of admission to Hospital before and after RLAI

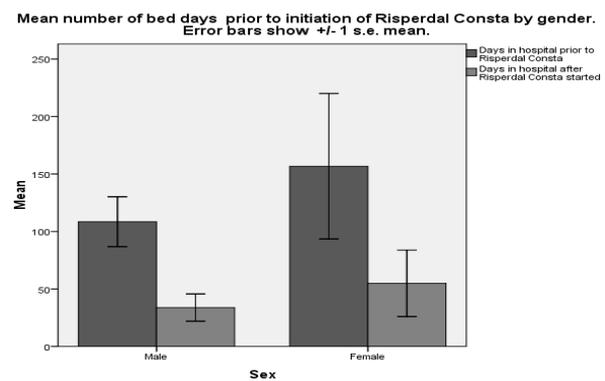


Figure 2. Number of days stayed in Hospital before and after RLAI

Comorbidity with drug misuse was 30%, 49% had physical illness comorbid with their psychiatric disorder.

Non-adherence to oral medication was the most common reason for starting on RLAI, 21 (followed by lack of response to other antipsychotics).

Number of admission and number of days stayed in each admission were reduced after RLAI in a statistically significant manner as shown in Table 2 and Figures 1, 2.

The saving in cost was calculated as cost of RLAI as £ 50 per injection of 50 mg fortnightly plus CPN time of half an hour face to face contact and half an hour travelling of £. The cost of oral or depot conventional drugs was considered as zero.

DISCUSSION

As expected this was a sample of chronically ill patients with schizophrenia. 80% were ill for more than 5 years, 50 % for more than 10 years which again indica-

tes chronicity. This is consistent with previous studies (Niaz 2007, Olivaries 2009).

The average number of antipsychotics before RLAI was 4.5 which indicates that patients did not respond to antipsychotics, hence the switching to other antipsychotics, which indicates treatment resistance of the sample.

The sample was typical of treatment resistant schizophrenia patients as seen elsewhere (Taylor 2003), with nearly all having been ill for five years or more and half ten years or more. Not surprisingly they had been treated with several different antipsychotics in the past. Three quarters of the sample were men, which again shows resistance to treatment and consistent with patients on clozapine studies (Taylor 2003).

Physical morbidity was as anticipated to be high.

Drug abuse comorbidity was around 30% which is less than previous studies (Niaz 2007) which may be due to the semirural area population compared to an inner city.

The main finding is that RLAI reduced number of admissions and number of days stayed in hospital. First, it can be due to changes, such as the development of home treatment and crises intervention service. It can also be due to the larger number of patients who started RLAI while they were inpatient. More than 55% and finally, it might reflect the locality, as a semirural area as schizophrenia's outcome is more favourable here compared to inner cities. The cost effectiveness of reducing number of admissions and total number of days stayed in hospital has already been proven by previous studies (Niaz 2007, Olivaries 2009).

Patients who stopped RLAI during the index period were 22% and the majority of them were due to lack of response which is understandable as all the sample at least theoretically qualified for TRS, followed by patients who refused the injection due to personal choice and lastly due to side effects about 5%, which is consistent with other studies.

Our retention during the index period of 78% is better than Niaz & Haddad of 58% and lower than Olivaries of 81% which may be due to the nature of Olivaries prospective studies and more follow up and reviews to the experimental group which led to better retention. This increased adherence to therapy with RLAI has been confirmed by Beauclaire et al. (2007).

It is striking that all previous studies samples tended towards chronicity with mean duration of illness around 10-12 years, and our results is consistent with that. It has been shown that schizophrenia is a neurotoxic illness and its course gets more chronic and less favourable in each relapse compared to the one before (Schooler 1997, Szymanski 1996). It has also been shown that RLAI produces more favourable outcome if used in first episode schizophrenia (Emsley 1998). The literature is accumulating and makes it compelling to change our practice and start to prescribe LAI as soon as possible rather than wait for a few years down the line to produce TRS or accumulate social and physical disabilities.

CONCLUSIONS

RLAI has reduced number of admission and number of days stayed in hospital in a statistically significant manner. Adherence has improved and it may be the cause of preventing relapse in these patients.

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Conflict of interest: None to declare.

Contribution of individual authors:

Hellme Najim: Design and idea of the study with some data collection, analysis of the results and writing and editing.

Ashish Pathak and Andrea Pathak: helped with some data collection.

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