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Psychopathology, insight and compliance in schizophrenia

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Abstract

Objective: A four-week longitudinal study was conducted to assess the relationship between insight, psychopathology and treatment compliance in schizophrenia.

Method: The study was conducted using Insight and Treatment Attitude Questionnaire (ITAQ), Positive and Negative Syndrome Scale (PANSS) and Medication Adherence Rating Scale (MARS). The sample comprised 50 patients with schizophrenia diagnosed according to research criteria of the International Classification of Diseases (ICD-10), with a mean duration of illness of 5.32 years.

Results: Substantial psychopathology was observed at intake and it improved significantly at the end of four weeks. Similar changes were observed in the score of insight and of compliance over four weeks. The insight and the compliance were positively correlated to each other at the beginning and at the end of four weeks. Both of these were negatively correlated with psychopathology scores on both occasions.

Conclusion: Insight and psychopathology remain important determinants of treatment compliance in schizophrenia over short term and long term follow up.

Key words: Insight; Compliance; Psychopathology; Schizophrenia.

Introduction

Insight has been an important but an elusive phenomenon in clinical psychiatry. While earlier authors viewed insight as a theoretical concept, recently there has been an attempt to measure this phenomenon and a number of standardised instruments are now available for this purpose. One of the several research enquiries about insight has been to study the correlation and utility of this concept in clinical practice. In keeping with this issue, assessment of insight has long been considered useful to predict treatment adherence in psychosis.

Compliance with treatment is a clinically relevant issue in the management of schizophrenia. Non-compliance increases the risk of relapse,[1,2] likelihood of hospital admissions and longer duration of admission when admitted.[3] It is believed that patients with schizophrenia following a successful course of treatment may gain awareness of their illness status, and if so, they also show better compliance with treatment in the short term[4,5] and sometimes in the long term[6-8] too.

The majority of studies have reported a positive relation between insight, psychopathology and treatment compliance.[6-10] However, some other studies have not reported so.[5,11]

It is possible that the association between insight and compliance, both being complex bio-psychosocial phenomena, varies in different cultures. To our knowledge, there are hardly any reports from India about the relationship between insight, psychopathology and compliance. We propose a hypothesis that the level of awareness is inversely related to psychopathology, and this relationship influences treatment adherence in schizophrenia and that the associations can be shown, even over a relatively short period of four weeks.

The present study was carried out to test the above stated hypothesis as to the relationship between insight, psychopathology and treatment compliance in patients with schizophrenia in the outpatient setting of a psychiatric hospital.

Method

Patients attending the outpatient department (OPD) at The Institute of Human Behaviour and Allied Sciences (IHBAS) went through a brief evaluation conducted by a qualified psychiatrist in the walk-in clinic. Then, a detailed assessment was carried out on a pre-arranged date and the case was discussed with a consultant.

For recruitment in this study, patients were screened on alternate days by one of the authors (VB) after the detailed assessment. All the patients were selected from the OPD as it was intended to assess treatment compliance of the patients living with family. Every first and third patient fulfilling the inclusion and exclusion criteria was recruited to the study. All the patients were on medication at the time of recruitment with a mean duration of current treatment of 10 weeks.

Fifty adult patients who satisfied the diagnostic criteria of research (ICD-10-DCR)[12] for schizophrenia, and the inclusion and exclusion criteria as well, were finally recruited to the study. Patients suffering from serious physical, neurological conditions, co-morbid psychiatric disorders and substance abuse or dependence (except nicotine) were excluded from the study. The patients with co-morbid substance abuse or dependence were not included as these disorders can influence psychopathology, insight and compliance. Written informed consent was obtained from all the patients and no patient was offered any incentive (monetary or any other kind).

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Table 1: Psychopathology, insight and compliance at first and second visit and its change over four weeks duration

	First visit Mean	SD	Second visit Mean	SD	t	df	sig
PANSS positive	12.36	5.96	11.12	5.73	5.67	49	0.000
PANSS negative	14.02	6.28	13.04	5.94	4.84	49	0.000
PANSS general psychopathology	24.36	5.10	21.80	5.16	9.76	49	0.000
Insight (ITAQ)	12.52	5.36	14.56	5.49	-6.03	49	0.000
Compliance (MARS)	5.7	2.43	7.1	2.47	-9.8	49	0.000

Table 2: Correlation analysis of psychopathology, insight and compliance on first visit

	PANSS positive	PANSS negative	PANSS general	Insight (ITAQ)	Compliance (MARS)
PANSS positive					
PANSS negative					
PANSS general					
Insight (ITAQ)	-0.638**	-0.404**	-0.522**		
Compliance (MARS)	-0.645**	-0.440**	-0.675**	0.798**	

**Correlation is significant at the 0.01 level (2-tailed)

Table 3: Correlation analysis of psychopathology, insight and compliance on second visit

	PANSS positive	PANSS negative	PANSS general	Insight (ITAQ)	Compliance (MARS)
PANSS positive					
PANSS negative					
PANSS general					
Insight (ITAQ)	-0.743**	-0.570**	-0.744**		
Compliance (MARS)	-0.778**	-0.513**	-0.676**	0.896**	

**Correlation is significant at the 0.01 level (2-tailed)

The patients were assessed twice. The first assessment was carried out after the detailed assessment in outpatient department and the second assessment was carried out at the end of four weeks during follow-up. Sociodemographic information was collected using a semi-structured proforma. Insight was assessed using Insight and Treatment Attitude Questionnaire (ITAQ),[13] psychopathology was assessed with Positive and Negative Syndrome Scale (PANSS)[14] and compliance was measured using the Medication Adherence Rating Scale (MARS).[15] A semi-structured proforma was used to assess compliance on the second visit as reported by relatives of the patients in order to corroborate and to get objective evidence of the treatment adherence.

ITAQ is an 11 item rating scale to evaluate a patient's recognition of their past and present illness, the possibility of having mental illness in the future and the need for continued treatment. PANSS is a 30 item rating scale which rates psychopathology along a seven-point continuum and has three subscales, namely positive, negative and general psychopathology subscales. MARS is a 10 item rating scale requiring yes/no responses and concentrates on different aspects indicating compliance, ie. medication adherence behaviour, attitude to taking medication, negative side effects and attitude to psychotropic medication.

Data were analysed using Statistical Package for Social Sciences (SPSS: version 10). As the data were normally distributed, a paired sample t-test of all the measures was done to find out whether they showed a significant change over the study period or not. Pearson correlation analysis was performed between variables at the first, as well as the second assessment to find out correlation between the variables. Stepwise logistic regression was applied with compliance as dependent variable and insight, psychopathology, age, sex, age of onset and duration of illness as independent variables.

Results

Mean age of the patients was 30.52 years (SD = 8.48). Thirty-three patients were males and 17 were females. Sixty-four percent of the patients were married, 34% were unmarried while 2% were separated. Mean age of onset of illness was 24.89 years (SD = 8.28) while mean duration of illness was 5.32 years (SD =4.38). The mean duration of current treatment was 10 weeks. There was no significant relationship between insight and age of onset or duration of illness.

Table 1 shows the mean PANSS positive, negative and general psychopathology, ITAQ and MARS scores measured on the first and the second visit. It is evident that positive symptom score on the first visit was relatively low [mean = 12.36]. However on paired t-test, the scores were found to have decreased significantly further at the end of four weeks [12.36 ± 5.96 to 11.12 ± 5.73 (p = 0.000)]. Similarly scores on negative and general psychopathology subscales decreased from 14.02 ± 6.28 to 13.04 ± 5.94 (p = 0.000) and from 24.36 ± 5.10 to 21.80 ± 5.16 (p = 0.000) respectively.

Significant improvement was seen in the level of insight as measured on ITAQ and in compliance as measured on MARS over a period of four weeks. Mean insight score improved from 12.52 ± 5.36 to 14.56 ± 5.49 (p = 0.000) over the study period and mean compliance score increased from 5.7 ± 2.43 to 7.1 ± 2.47 (p = 0.000). The significant improvement in compliance as measured by MARS was also supported by the relatives' report of the patients' compliant behaviour over study duration. This was evident from the mean score of 24.64 ± 4.63 (about 80% of the maximum possible score of 30) as assessed on the semi-structured proforma used for this purpose.

Correlation analysis was performed in order to examine the association among the scores on the level of insight, psychopathology and compliance as shown in *Tables 2* and *3*. Positive, negative and general psychopathology on first visit as measured on PANSS showed significant negative

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Table 4: Stepwise logistic regression with compliance on first visit as dependent variable

Model	R	R Square	df1	df2	F	Sig
1	0.798	0.636[a]	1	48	83.901	0.000
2	0.853	0.728[b]	1	47	62.793	0.000
3	0.883	0.779[c]	1	46	54.193	0.000
4	0.897	0.804[d]	1	45	46.251	0.000

a. Predictors: Insight [1st visit]
b. Predictors: Insight, General psychopathology [1st visit]
c. Predictors: Insight, General psychopathology, Positive psychopathology [1st visit]
d. Predictors: Insight, General psychopathology, Positive psychopathology, Negative psychopathology [1st visit].

Dependent Variable: Compliance on first visit

correlation with insight (Pearson coefficient = -0.638, -0.404, -0.522 respectively, all highly significant at 0.01 level of significance) and compliance (Pearson coefficient = -0.645, -0.440, -0.675 respectively, all highly significant at 0.01 level of significance). Similar correlations were observed at the second visit among these variables. Moreover, insight and compliance had a significant positive correlation with each other at the first (0.798), as well as at the second visit (0.896).

Stepwise logistic regression was carried out with compliance as dependent variable and age of the patient, age of onset, duration of illness, gender, insight and psychopathology as independent variables with probability of F to enter ≤ 0.05, probability of F to remove ≥ 0.10 and minimum tolerance = 0.001. On the first visit *(see Table 4)*, four significant predictors of compliance emerged with overall multiple R of 0.897, which is significant at 0.000 levels. Insight being the most robust predictor of compliance entered the equation at step one [R = 0.798 with F to enter at 83.901 which is significant at 0.000 level]. General psychopathology was the second most powerful predictor entered the equation at step two [R = 0.853 with F to enter at 62.793 which is again significant at 0.000 level]. The third most powerful predictor was positive psychopathology [R = 0.883 with F to enter at 54.193 which is significant at 0.000 level]. Negative psychopathology was the fourth most powerful predictor and thus entered the equation at step four [R = 0.897 with F to enter at 46.251 which is significant at 0.000 level of significance]. This shows that all these variables accounted for 81% variance [R square = 0.804] in compliance on the first visit.

Compliance at the second visit was kept as dependent variable with other variables as independent variables. Results *(see Table 5)* indicate that three significant predictors of compliance emerged with an overall multiple R of 0.976, which is significant at 0.000 levels. Compliance at first visit was the most powerful predictor of compliance at second visit and it entered the equation at step one [R = 0.915] with F to enter 247.533, significant at 0.000 level. Compliance reported by relatives was the second most powerful predictor [R = 0.973] with F to enter 415.817 again significant at 0.000 level followed by insight on second visit [R = 0.976] with F to enter 304.255 significant at 0.000 level of significance.

Table 5: Stepwise logistic regression with compliance on second visit as dependent variable

Model	R	R Square	df1	df2	F	Sig
1	0.915	0.838[a]	1	48	247.533	0.000
2	0.973	0.947[b]	2	47	415.817	0.000
3	0.976	0.952[c]	3	46	304.255	0.000

a. Predictors: Insight [1st visit]
b. Predictors: Insight, General psychopathology [1st visit]
c. Predictors: Insight, General psychopathology, Positive psychopathology [1st visit]

Dependent Variable: Compliance on first visit

Thus, this shows that these three variables accounted for around 96% variance [R square = 0.957] in compliance. The psychopathology scores on the second visit did not predict compliance to a significant level.

Discussion

This study was carried out to assess a short-term longitudinal relationship among insight, psychopathology, and compliance in patients with schizophrenia on outpatient follow up in a psychiatric hospital.

We have been able to show that the level of awareness has an inverse relationship with psychopathology and that a positive relationship existed between insight and compliance at the first, as well as the second visit. Moreover insight (63.6%) and psychopathology (16%) could predict treatment adherence at the first visit whereas compliance at baseline (83.8%) and to some extent insight could predict treatment adherence at the second visit after four weeks.

These findings support a significant relationship between insight, psychopathology and compliance on the first visit. However, the relationship was partially stable over a period of four weeks to the extent that only insight continued to be associated with treatment adherence at four weeks.

A similar kind of relationship over a period of four weeks has also been reported by a number of studies.[4,6,16-18] Nevertheless, there are other studies that have not shown such a relationship among insight, psychopathology and treatment adherence.[11,19,20] The relationship among insight, psychopathology and treatment adherence could actually be complex and we would like to address this issue in order to explain variability of findings across studies.

There are studies, which have recruited samples with heterogeneous diagnoses[11,19, 20] in contrast to ours, as well as of those where a homogenous sample of patients has been studied.[13,21-24]

The method used to assess insight varies across studies. There are studies that have not used any scale to assess insight.[19] Few studies have used set of questions developed by the authors themselves on discrete items.[21,25] There are other studies that have used structured instruments.[6,18,22,24,26] It is highly possible that the method used to assess insight could influence the results and the nature of association between insight and compliance.

Insight has always been difficult to assess and might vary across difficult cultures. In our culture, psychiatric illness is

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often not viewed in the usual disease models prevalent in western culture, probably because of marked variation in mental health literacy, as well as attitudes and beliefs in the health models.[27]

Fever, pain, cough and all physical sufferings are regarded as morbid conditions. In contrast, psychological and emotional problems are construed as influences of the evil spirits, consequences of the wrong deeds in the previous life, or sometimes as dramatised behaviour. It has been suggested that in our culture mental problems could be better accepted in terms of levels of dysfunction than the western model of illness with signs and symptoms. In this regard, there can be no doubt that the use of any western instrument could raise questions about the validity of measuring insight in patients with psychosis in our population.[27] However, we chose ITAQ in our study as it avoids words like 'psychiatric symptoms' and 'illness' and mainly asks questions about problems.

Certain studies have examined the relationship between insight and compliance only cross-sectionally, while some others have examined the relationship over a short period[4,17,28] and several others over long periods.[7,10,13,25] The relationship remains positive and unidirectional in studies with cross-sectional design or short time frame like four weeks. However, the relationship becomes complex and tenuous over long term.[13]

Finally, the results might also differ depending upon the phase of illness. Since the patients in our study were stable on follow-up in the outpatient clinic, there was a positive relationship between insight and compliance while in the studies conducted with the patients in acute phase of illness, the relation was found to be complex.[24]

Our study has certain limitations. The sample size was rather small which was unavoidable because of practical constraints. The study period of four weeks was relatively short to examine the relationship between insight and compliance in schizophrenia. While this could be true from a conceptual understanding of schizophrenia, a number of recent studies have carried out short-term examination of this relationship. The consistent findings of those studies encouraged us to keep a period of four weeks for this study.

We excluded alcohol and drug dependence in our subjects in order to ensure homogeneity of the sample. It is possible that the level of purity of the sample has limited the generalisability of our findings in general psychiatric practice. However, the commonest (67%) substance use in psychosis has been reported to be nicotine dependence[29] and such patients were included in our study. Dependence on other substances may clinically influence psychopathology, treatment response and also the level of awareness of illness, so they were excluded.

Our baseline symptom score was rather low and the reduction of less than one point in the positive and negative subscale of PANSS is not likely to be clinically significant. This could be because most of our patients had already been on treatment over a mean period of 10 weeks before recruitment to the study.

We conclude that insight and psychopathology remain important determinants of treatment compliance in schizophrenia over short term and long term follow up. It is always necessary to accurately assess insight in the background of the local cultural context and to keep the dynamic nature of insight and compliance in mind. Future studies should try to assess awareness of illness in culturally sensitive ways and determine its relative contribution among the host of determinants of treatment adherence.

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Declaration of Interest: None.

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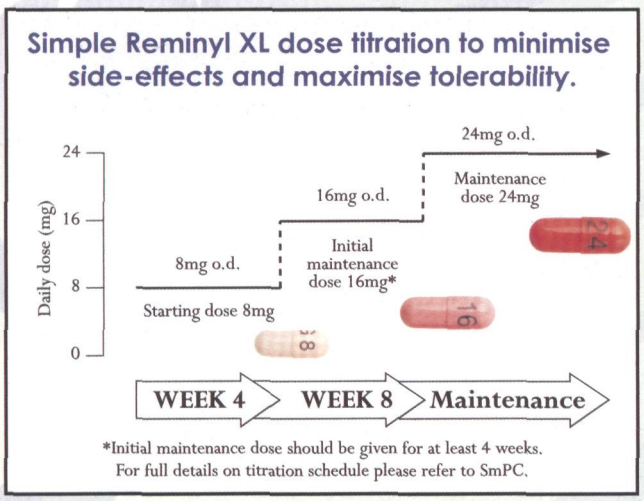

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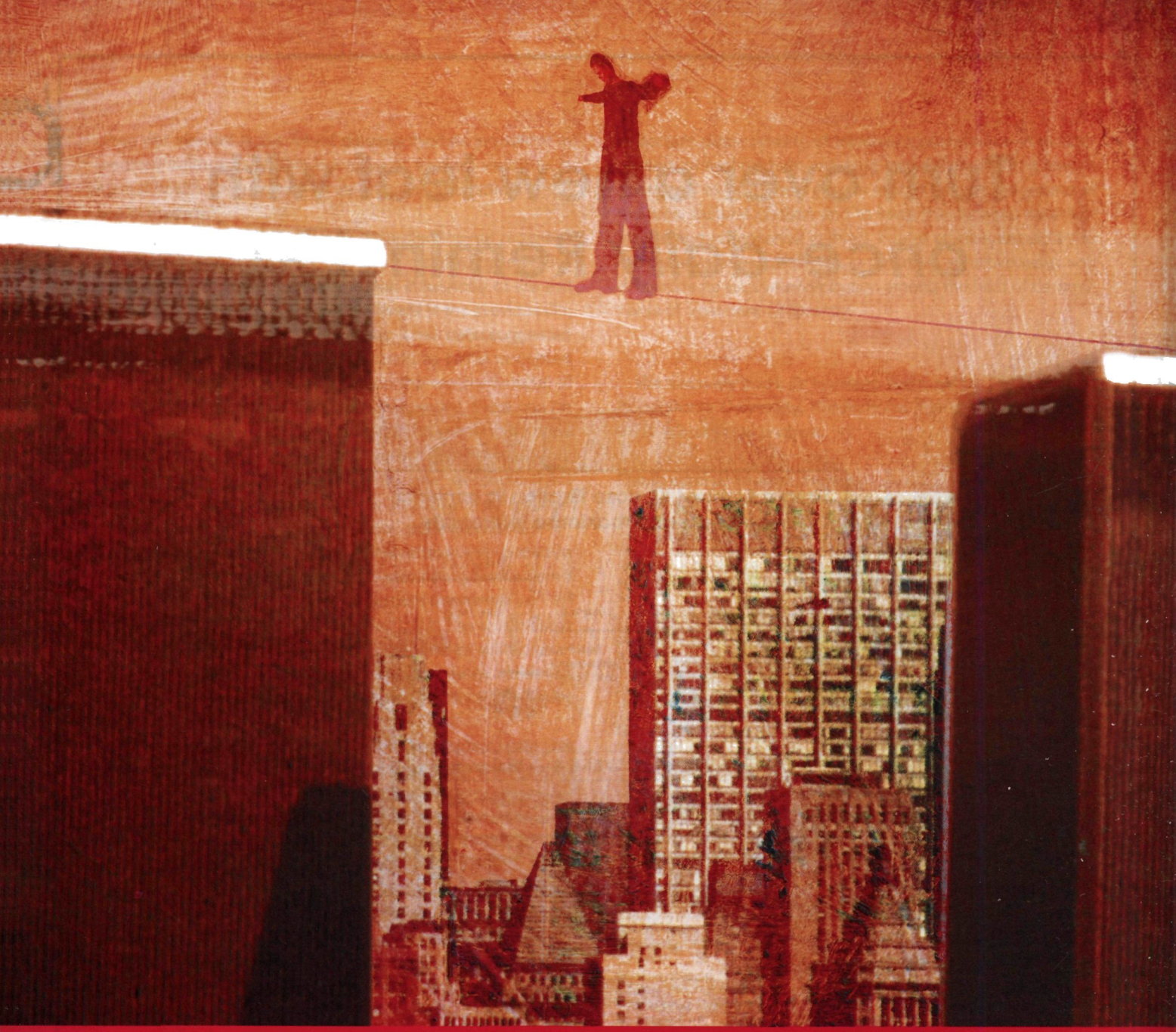

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PROLONGED RELEASE CAPSULES

37.5mg 75mg 150mg

ABBREVIATED PRESCRIBING INFORMATION Venex XL 37.5, 75 and 150 mg prolonged-release capsules. Presentation: The 37.5 mg capsule is orange/transparent; the 75 mg capsule is yellow/transparent; the 150 mg capsule is buff/transparent. **Indication:** Major depressive episodes. **Dosage:** The capsules should be swallowed whole with liquid, during a meal. Venex XL should be taken once daily, in the morning or evening. Treatment should be initiated at 75 mg. Some effect will become evident after 2 to 4 weeks. If the clinical response is unsatisfactory, the dose may be increased to 150 mg, then again to 225 mg. Patients not responding may benefit from higher doses up to 375 mg. In all cases high doses should be administered under close supervision. Doses should be increased at 2 week intervals, with a minimum of 4 days between each increment. If no response is seen after 2 to 4 weeks, there is no benefit to be gained from continued treatment. Acute episodes of major depression require continued treatment of at least 4 to 6 months. Treating doctors should periodically re-evaluate the continued need for venlafaxine treatment. *Impaired renal or hepatic function:* Patients with renal or hepatic impairment should be given lower doses. Treatment may need to be initiated with venlafaxine immediate-release pharmaceutical forms. *Children and adolescents:* Not recommended. *Elderly patients:* Elderly patients should be started on the lowest recommended dose. *Discontinuation of Venex XL:* Abrupt discontinuation should be avoided. The dose should be gradually reduced over a period of at least one to two weeks in order to reduce the risk of withdrawal reactions. **Contraindications:** Hypersensitivity to venlafaxine or any of the excipients. Venex XL should not be used concomitantly with an MAOI, or within 14 days of discontinuing MAOI treatment. 7 days should be allowed after discontinuing venlafaxine prior to initiating MAOI treatment. **Warnings and precautions:** Venex XL should not be used in children and adolescents under 18 years because of the risk of suicide-related behaviour and hostility. Depression is associated with an increased risk of suicidal thoughts. Aggressive behaviour can occur during therapy with venlafaxine. The use of venlafaxine has been associated with akathisia. Mania/hypomania may occur. Seizures occur very rarely. There is a risk of serotonin syndrome. Venex XL should be used with caution in patients receiving antipsychotics due to risk of neuroleptic malignant syndrome. Mydriasis has been reported. Venlafaxine may affect glucose control in diabetes. Hyponatraemia secondary to transient SIADH has been reported. Caution in micturition disorders, acute narrow-angle glaucoma, low or high blood pressure, heart conditions. A clinically relevant increase in serum cholesterol may occur. The risk of cutaneous and mucosal bleeding may be increased. Withdrawal symptoms when treatment is discontinued are common. Contains sucrose. The 37.5 mg capsule contains E124; the 75 and 150 mg capsules contain E110. **Interactions:** MAOIs, tryptans, linezolide, SSRIs, lithium, antipsychotics, adrenaline, noradrenaline, dopamine, St. John's wort, ECT, alcohol, anticoagulants, weight-loss preparations, clozapine, cimetidine, risperidone, indinavir, haloperidol, imipramine, CYP2D6 and CYP3A4 inhibitors. **Undesirable effects:** Most common: Drowsiness, dizziness, headache, increased muscle tone, paraesthesia, tremor, abnormal accommodation, mydriasis, visual disturbances, yawning, reduced appetite, constipation, nausea, vomiting, dry mouth, impaired micturition, sweating, increased serum cholesterol, weight loss, hypertension, vasodilatation, ecchymosis, mucous membrane bleeding, asthenia/tiredness, abnormal ejaculation/orgasm (male), anorgasmia, erectile dysfunction, reduced libido, abnormal dreams, insomnia, nervousness, sedation. For other undesirable effects see Summary of Product Characteristics. **Pack size:** 28 capsules. **Marketing authorisation holder:** Clonmel Healthcare Ltd, Clonmel, Co. Tipperary. **Marketing authorisation numbers:** PA 126/182/1-3. Full prescribing information is available on request. Prescription only medicine. **Date last revised:** November 2008.

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VENEX XL IS THE CLONMEL BRAND OF VENLAFAXINE.

CLONMEL HEALTHCARE

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