

Olgu serisi / Case series**Treatment options of delusional parasitosis: case series of 14 patients**

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ABSTRACT

Objective: Delusional parasitosis (DP) is a rare psychiatric disorder in which patients develop the delusional belief that they are infested by parasites. Second generation antipsychotics and antidepressants can be used for its treatment. Traditionally the first generation antipsychotic pimozide has been used. The aim of this article is to investigate the efficacy of second generation antipsychotics compared to pimozide in a case series of patients with DP and to evaluate the validity of DP across cultures. **Methods:** We have evaluated fourteen patients with primary or secondary DP regarding their demographic and clinical variables as well as their responses to treatment including chlorpromazine equivalent doses. We saw fourteen patients for a six month follow up period. **Results:** Complete remission was achieved in all patients on pimozide therapy. The remission rates for those on olanzapine were 71%, for those on risperidone were 50%. The lowest doses in chlorpromazine equivalent doses to achieve full remission were used with olanzapine, followed by risperidone and pimozide. DP was found to be a valid diagnosis in the Turkish context. **Discussion:** Clinical and demographic data suggests that DP is a stable diagnostic category across different cultures. Good remission rates can be achieved with first and second generation antipsychotics when compliance can be established. (*Anatolian Journal of Psychiatry* 2012; 13:239-242)

Key words: delusional parasitosis, Ekbon, pimozide

Sanrısıl parazitozun tedavi seçenekleri: On dört hastalık olgu serisi**ÖZET**

Sanrısıl parazitoz (SP) hastaların parazitlerle enfekte oldukları sanrısıl inancını geliştirdikleri nadir görülen bir psikiyatrik bozuktur. Tedavisi için ikinci kuşak antipsikotikler ve antidepressanlar kullanılabilir. Geleneksel olarak birinci kuşak antipsikotiklerden olan pimozid kullanılmıştır. SP tanısı konan olgu serisinde pimozide göre ikinci kuşak antipsikotik ilaçların etkinliğini araştırmak ve SP'nin kültürler arasında geçerliliğini değerlendirmektir. **Yöntem:** Birincil veya ikincil SP tanısı konan 14 hastanın demografik ve klinik değişkenlerinin yanı sıra, klorpromazin eşdeğeri dozlarda tedaviye verdikleri yanıtlar değerlendirilmiştir. On dört hasta altı ay izlenmiştir. **Sonuçlar:** Pimozid alan tüm hastalar tam remisyona girmiştir. Olanzapin alanlarda remisyon oranı %71, risperidon alanlarda %50 olarak bulunmuştur. Tam remisyon elde etmek için kullanılan klorpromazin eşdeğeri dozlarda en düşük doz olanzapinde, ardından risperidon ve pimozide kullanılmıştır. SP Türkiye bağlamında geçerli bir tanı olarak bulunmuştur. **Tartışma:** Klinik ve demografik veriler SP'nin farklı kültürler arasında tutarlı bir tanı kategorisi olduğunu göstermektedir. İyi bir uyum sağlandığında, hem birinci, hem de ikinci kuşak antipsikotiklerle iyi remisyon oranları elde edilebilir. (*Anadolu Psikiyatri Derg* 2012; 13:239-242)

Anahtar sözcükler: Delüzyonel parazitoz, Ekbon, pimozid

INTRODUCTION

Delusional parasitosis (DP) is the fixed delusional belief of being infested with parasites or small living creatures although there is no medical evidence for this.¹ It has been well established that DP can occur as a monodelusional disorder¹ as classified under delusional disorder, somatic type in DSM-IV² or it can also be associated with other illnesses particularly as part of a major psychiatric illnesses such as dementia, schizophrenia or major depression. It occurs as a concomitant symptom

in brain disorders particularly neoplasms, infections or strokes, and with other somatic illnesses which cause pruritus or paraesthesia such as diabetes with neuropathic pain, uraemia, jaundice or cancer.¹ It can also be induced by substances particularly amphetamines and cocaine as well as by prescribed medications such as antibiotics, steroids or non-steroidal anti-inflammatory drugs^{1,3} and heroin withdrawal.⁴

The male/female ratio in DP is one to one when patients are under the age of 50. This ratio changes to one to

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three with a high preponderance of female patients in older age. This female preponderance is also observed in most case reports and small case series.^{5,6} The mean age of onset has been described to be between 55 and 65.⁶

In cases of secondary DP associated with psychiatric illnesses, it has been demonstrated in previous studies that DP is most frequently associated with schizophrenia,^{7,8} schizophrenia is followed by bipolar disorder and major depression.^{2,9,10} In cases of secondary DP associated with depression, treatment of the syndrome involves both the treatment of depression and psychosis. When depression is present in the clinical picture, the use of tricyclic antidepressants,^{1,11} selective serotonin reuptake inhibitors¹¹ and electroconvulsive therapy¹ were found to be successful as treatment methods.

To treat the delusional symptoms of DP, antipsychotics such as chlorpromazine, trifluoperazine, fluphenazine deaconate, perphenazine, haloperidol, pimozide, quetiapine, sulpiride, sertindole, risperidone and olanzapine have been reported to be effective.¹²⁻¹⁴ Depot antipsychotics like flupenthixol has also been used.¹ Although pimozide used to be the most commonly advocated antipsychotic for the treatment of DP, there is no conclusive evidence that pimozide is superior to other antipsychotics.¹ Its cardiovascular and extra-pyramidal side effects (Q-T interval prolongation) preclude its use in patients with cardiac problems and in the elderly. A limited number of cases with second generation antipsychotics in the treatment of DP have been published.^{1,13,15}

There is clearly a need to get more data for answering questions about the efficacy of second generation antipsychotics compared to pimozide in DP, the length of time that treatment is needed and the dosages that ought to be used.

In this study, the progress of 14 DP patients is reported in terms of their demographic characteristics and clinical variables. The patients were treated with different antipsychotics and antidepressant medications and followed up over a six months period.

METHODS

Subjects

We recruited fourteen DP patients who were referred to our liaison psychiatry clinic by dermatology or infectious disease departments since 2001.

Procedure

The psychiatric diagnosis was based on a clinical interview performed using SCID-I (16,17). Mini Mental Status Examination (MMSE) and Hamilton Depression Scale (HDS) were obtained from all patients following the psychiatric diagnosis. All patients showing a HDS score of 17 or above were re-examined using the HDS 3 and 6 months post-treatment. In order to exclude secondary medical causes, we performed a multitude of tests including full blood count, liver and thyroid function tests, glucose, syphilis serology, iron, folate and vitamin B12 levels and magnetic resonance brain scan. Any substance misuse was excluded. After excluding sec-

ondary medical causes and the diagnosis of delusional parasitosis has been sealed, the patients' treatment was started by the primary psychiatrist who first examined the patients and then the patient was included in the study. All patients were assigned to be treated with either pimozide, olanzapine or risperidone. 50 % allocated to olanzapine and the other 50 % to other drugs, turned out that way because of the small sample size. Three and six months after initiation of treatment, patients were re-examined using SCID-I.

Statistical analysis

Sociodemographic and clinical characteristics of the patients were documented quantitatively. Data were analysed with the SPSS 11.0 package program.

RESULTS

Out of 647 dermatology consultations and 43 infectious disorders consultations since 2001, 10 (2%) DP patients from dermatology and 4 (10%) DP patients from infectious disorder clinics were identified. Demographic and clinical characteristics of the cases are presented in Table 1.

Ten patients (71%) had primary delusional parasitosis. One patient (7%) had residual schizophrenia while another three (21%) had a major depressive disorder with psychotic features. Two of the depressed patients were treated with additional venlafaxine (150 mg/day) while the third one (case 9) was treated with additional citalopram (40 mg/day) for their depressive symptoms.

The duration of symptoms ranged from 6 to 36 months with an average of 17.42 ± 11.7 months (Table 2). Nine (64%) had anxieties about contaminating others. The dermatological signs we found included excoriation, contact dermatitis due to variable topical lotions and lichenification. According to the MRI studies, four (29%) patients showed cortical atrophy at minimal level. Those patients were all diagnosed as primary DP and their MMSE scores were above 28. This atrophy was within the expected level for their ages.

Seven (50%) of the patients were treated with olanzapine while three (21%) and four (29%) of them were treated with pimozide and risperidone, respectively. No adverse effect of the psychotropic drugs medication was observed in any of the cases. The average initiation dose of olanzapine was 5.71 ± 1.8 mg/day, while it was 2.0 ± 0.0 and 2.50 ± 1.0 mg/day for pimozide and risperidone respectively. The average doses of olanzapine, pimozide and risperidone on the 6th month of the treatment were 7.85 ± 5.6 , 3.0 ± 1.0 and 3.5 ± 1.9 mg/day, respectively. The dosages of olanzapine, pimozide and risperidone of those patients who completely remitted at the end of 3 months were 5.0 ± 0.0 , 2.0 ± 0.0 and 2.0 ± 0.0 mg/day, respectively. The dosages of olanzapine, pimozide and risperidone that the patients were subjected to and who completely remitted at the end of 6 months were 7.5 ± 6.1 , 3.0 ± 1.0 and 2.0 ± 0.0 mg/day, respectively (Table 3). Three months after treatment initiation complete remission of symptoms was obtained in eight (57%) patients, after six months the number of patients in full remission increased to 11 (78%) (Table 2). From

Table 1. Demographic and clinical characteristics of cases with DP

Case	Age	Gender	Marital status	Education	Comorbid physical illness	Diagnose	Duration of symptoms	Cort. Atr. on MRI	Fear of contaminating others
1	68	F	Divorced	University	HT	Delusional D.	24	+	Dermatology +
2	71	F	Divorced	College	COPD	Delusional D.	6	+	Dermatology -
3	82	F	Married	Primary school	HT	Delusional D.	18	+	Dermatology -
4	49	F	Divorced	College	HT	MDDPF	6	-	Dermatology +
5	69	M	Married	University	COPD+HT	Delusional D.	36	+	Infectious D. +
6	51	M	Divorced	Primary school	-	MDDPF	6	-	Dermatology +
7	65	F	Divorced	Primary school	-	Residual Sch.	12	-	Dermatology -
8	57	F	Married	College	-	Delusional D.	8	-	Dermatology -
9	63	F	Single	College	HT	MDDPF	6	-	Dermatology +
10	59	F	Divorced	University	HT	Delusional D.	36	-	Infectious D. +
11	60	F	Married	College	-	Delusional D.	12	-	Infectious D. +
12	49	F	Divorced	Primary school	-	Delusional D.	14	-	Dermatology +
13	50	M	Single	College	-	Delusional D.	24	-	Dermatology -
14	52	F	Divorced	College	-	Delusional D.	36	-	Infectious D.

F: Female, M: Male, HT: Hypertension, COPD: Chronic obstructive pulmonary disease
MDDPF: Major depressive disorder with psychotic features, ID: Infectious disorders

Table 2. HDS and MMSE results and treatment - outcome in cases with DP

Case	HD S 0	HD S 3	HD S 6	MMSE	Initial treatment	Outcome on 3 rd month	Treatment between 3 rd and 6 th months	Outcome on 6th month
1	10			28	Olanzapine 5mg	Complete Remission	Olanzapine 5 mg	Complete Remission
2	12			28	Pimozide 2mg	Complete Remission	Pimozide 2 mg	Complete Remission
3	13			25	Pimozide 2mg	Partial Remission	Pimozide 3 mg	Complete Remission
4	24	15	10	30	Venlafaxine 150 mg +Olanzapine 5 mg	Complete Remission	Venlafaxine 150 mg +Olanzapine 5 mg	Complete Remission
5	12			29	Olanzapine 10 mg	Partial Remission	Olanzapine 20 mg	Complete Remission
6	30	22	8	28	Venlafaxine 150 mg +Risperidone 2 mg	Complete Remission	Venlafaxine 150 mg +Risperidone 2 mg	Complete Remission
7	8			28	Olanzapine 5 mg	Complete Remission	Olanzapine 5 mg	Complete Remission
8	11			30	Risperidone 4 mg	Partial Remission	Risperidone 6 mg	Partial Remission
9	28	17	10	28	Citalopram 40 mg +Olanzapine 5 mg	Complete Remission	Citalopram 40 mg +Olanzapine 5 mg	Complete Remission
10	10			30	Pimozide 2 mg	Partial Remission	Pimozide 4 mg	Complete Remission
11	14			30	Olanzapine 5 mg	Partial Remission	Olanzapine 10 mg	Partial Remission
12	12			30	Risperidone 2 mg	Partial Remission	Risperidone 4 mg	Partial Remission
13	10			28	Risperidone 2 mg	Complete Remission	Risperidone 2 mg	Complete Remission
14	10			27	Olanzapine 5 mg	Complete Remission	Olanzapine 5 mg	Complete Remission

the seven patients treated with olanzapine five achieved full remission after three months, six after six months. From the three patients treated with pimozide one achieved full remission after three months, all three after six months after dose increases. From the four patients treated with risperidone two patients achieved full remission after three months, this did not change after six months despite dose increases. When the patients with the diagnosis of major depressive disorder with psychotic features were excluded in order to eliminate the effects of antidepressants five patients out of 11 (45.%) achieved full remission after three months, eight patients out of 11 (73%) after six months. All patients with major depression with psychotic features showed full remission after three months of treatment, an effect that

was sustained after six months. The percentage of patients that remitted completely in the group without comorbid depression, were 45% and 73% after three and six months, respectively. However, the difference was not statistically significant at the end of three month ($\chi^2=2.86$, $p>0.05$) or sixth month ($\chi^2=1.04$, $p>0.05$).

100 mg chlorpromazine equivalent doses for pimozide, olanzapine and risperidone are 1 mg, 5 mg and 1.2 mg respectively.¹⁸ The mean chlorpromazine equivalent doses for patients treated with olanzapine, pimozide and risperidone at the beginning of treatment, at three months of treatment and at six months of treatment are given in Table 3. Expressed as chlorpromazine equivalents these increases in time were 42.8, 100 and

Table 3. Mean doses and chlorpromazine equivalents of olanzapine, pimozide, risperidone and the recovery rates during the treatment period

Antipsychotic	Mean dose till 3 rd m.	Mean dose till 6 th m.	Dose inc. during treat. period	CLP eq. till 3 rd m.	CLP eq. till 6 th m.	Dose inc. during treat. per. CLP eq.	RR on the 3 rd month	RR on the 6 th month	Difference RR 3 rd -6 th (%)
Olanzapine	5.71 mg	7.85 mg	2.14 mg	114.2 mg	157 mg	42.8 mg	71.5	85.8	14.3
Pimozide	2 mg	3 mg	1 mg	200 mg	300 mg	100 mg	33.3	100	66.7
Risperidone	2 mg	3.5 mg	1.5 mg	208.4 mg	291.7 mg	83.3 mg	50	50	0

m.: month, CLP: Chlorpromazine, RR: Recovery rates

83.3 mg, respectively.

DISCUSSION

We present one of the biggest sample sizes in any DP study to date. Our sample was consistent with previous observations on epidemiology in delusional parasitosis describing female preponderance (5,19) and older patients.²⁰

Our DP cases were classified into three groups according to the patients' psychiatric status. The first and the largest group (n=10, 71%) was diagnosed as having primary DP; the second group (n=3, 21%) included the patients having major depressive disorder with psychotic features and the third group (n=1, 7%) was diagnosed as suffering from residual schizophrenia. These findings are compatible with the literature.^{2,7,8}

None of the comorbid conditions (hypertension or COPD) were etiologically related to DP but can rather be attributed to the advanced age of the patients. It was previously demonstrated that there is a high frequency of social isolation in DP patients.⁵ In our sample, 57% of the patients were divorced and %14 were single, which is all consistent with previous findings suggesting that our sample is highly representative of a normal DP population.

Huber et al. studied brain lesions of 9 primary and secondary DP patients using magnetic resonance imaging and showed a possible relevance of structural lesions predominantly in putamen. All medical (secondary) DP cases' subcortical white matter lesions were found mainly in the centrum semiovale. None of the primary DP cases showed brain atrophy, but three of the five medical DP cases had generalized brain atrophy.²¹ Our study is the second to search for the structural changes in DP patients. Only 4 of the primary DP patients showed minimal brain atrophy. There were no structural striatal changes.

Three different antipsychotics (pimozide, olanzapine and risperidone) were chosen for the treatment of DP in patients. Full sustained remission after six months was achieved in 11 patients (79%). This result is compatible albeit a little bit higher than in other studies.^{1,8} In Accordance with the results shown in the comprehensive systematic review by Lepping et al.¹ there was a tendency towards higher full remission rates with first generation antipsychotics compared to second generation antipsychotics in our sample. However, all three antipsychotics were successful in the treatment of DP. On the other hand, the small sample size limits the generalizability of our results. When compared with previous big retrospective studies, the remission rates with pimozide appear higher. In a meta-analysis of 1223 cases Trabert found a full remission rate of 50% with pimozide treatment, compared with a 30% remission rate in patients treated before pimozide was used.⁸ Those results led to pimozide therapy being seen as the first line treatment of DP, a choice now considered outdated because of considerations of safety and tolerability.¹ Furthermore, in this study, the effects of chlorpromazine equivalent doses of the three chosen antipsychotics were also evaluated. It was shown that the lowest equivalent doses were used within the group treated with olanzapine to reach complete recovery, followed by risperidone and pimozide. This points towards the opportunity of using lower equivalent doses of second generation antipsychotics compared to pimozide further improving safety and tolerability considerations.

It is also noteworthy that doses of the antipsychotics used to treat DP are lower than the doses required to treat schizophrenia. DP is known to be diagnosed mostly after 55 years of age,⁶ this may be the answer of why lower doses are enough to treat this disease. More studies with bigger sample sizes treated with second generation antipsychotics are needed to be able to generalize these results.

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