EFFICACY OF CITALOPRAM IN TREATMENT OF PATHOLOGICAL SKIN PICKING, A RANDOMIZED DOUBLE BLIND PLACEBO CONTROLLED TRIAL

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Abstract- Various studies suggest that selective serotonin reuptake inhibitors (SSRIs) may be useful in treating pathological skin picking (PSP). This study sought to assess effectiveness of citalopram in comparison with placebo in treating PSP. Forty five individuals with PSP were recruited in a four-week, randomized clinical trial of citalopram (20 mg/day) in comparison with placebo. Study measures assessing skin picking severity, mental health status, obsessive compulsive disorder and quality of life were given at baseline, weeks 2 and 4. PSP severity, general health status, obsession-compulsion severity and quality of life level were similar between two groups at baseline ($P > 0.05$). Treatment analyses revealed significant improvements in quality of life, general health status and obsession-compulsion severity in citalopram group compared to placebo group ($P < 0.05$). Mean PSP severity reduction in citalopram group was more than placebo group but this difference was not significant. Citalopram can improve general health status and quality of life in individuals with PSP but its effect on skin picking behavior doesn't differ significantly with placebo. Other trials with longer duration are needed to determine the exact efficacy of citalopram on PSP.

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INTRODUCTION

Pathologic skin picking begins as an urge to touch, scratch, squeeze, or dig at the skin, often in response to a minor flaw or mild acne. Skin damage can range from mild to extreme; serious complications, such as scarring and cellulitis may develop (1-3). The behavior often leads to significant functional impairment and emotional distress (2).

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Prevalence rates of pathologic skin picking in the general population are unknown, but studies have found that the behavior occurs in 4% of college students (4), 2% of dermatology patients (5, 6), 11.8% of adolescent psychiatric inpatients (7) and 44.9% of individuals with body dysmorphic disorder (8).

Individuals with pathologic skin picking rarely seek dermatological or psychiatric treatment due to embarrassment (2) or the mistaken belief that their condition is untreatable (9). Pathologic skin picking can present as a diagnostic riddle to psychiatric professionals. It can present as an independent syndrome or, conversely, it can be a symptom of several different psychiatric disorders (10).

Pathologic skin-picking has been conceptualized as an obsessive-compulsive spectrum disorder (along with trichotillomania and nail-biting), (11) as a self-mutilating behavior (12) and as an impulse-control disorder (13). It may be accompanied by other psychiatric disorders (38.3%) like mood disorders (16.7%) and obsessive-compulsive disorder (15%) (14). Despite this, its significance remains largely unrecognized by the medical and psychiatric communities and little is known regarding effective treatment. The paucity of available outcome data makes the treatment of pathologic skin picking a challenge for clinicians.

Current treatment approaches primarily entail the use of selective serotonin reuptake inhibitors (SSRIs) and cognitive behavioral therapy (15). Pathologic skin-picking may respond to serotonergic agents. Double-blind study of fluoxetine found evidence of efficacy in improvement of skin picking behaviors that appeared to be independent of changes in depression and anxiety (16). An open-label study of sertraline found significant improvement in skin-picking behavior, with resultant reduction in lesions (17). A similar open label study of fluvoxamine showed benefit across a variety of measures, and the effects appeared independent of mood (13). Case reports also have suggested preferential response to serotonergic agents (3, 18, 19). These results, however, are difficult to interpret given group differences in psychiatric comorbidity at baseline. In addition, several other case reports and small sample open trials indicate the responsiveness of pathologic skin-picking to treatment with serotonin reuptake inhibitors (12, 18-20).

Citalopram is a logical choice for the treatment of pathologic skin-picking given that it is an SSRI, and it has been noted to have few side effects (21). Additionally, citalopram has been shown to be effective in patients with treatment-refractory obsessive-compulsive disorder, trichotillomania, and impulse control disorders (22-27). Also, an open-label study of escitalopram showed that it can be an effective agent in reducing pathological skin picking (10).

The purpose of this study was to investigate the efficacy of citalopram in the treatment of pathologic skin picking.

MATERIALS AND METHODS

Patient selection

Forty five patients with pathologic skin picking were enrolled in a 4-week, randomized clinical treatment trial with 20 mg daily citalopram. The deputy of research in Tehran University of Medical Sciences review board approved the study protocol before the initiation of study enrollment. All participants signed an informed consent statement before study participation.

Participants satisfied the following study inclusion criteria: repetitive skin picking resulting in noticeable tissue damage; associated emotional distress and/or functional impairment; age between 18 and 65 years; and duration of skin picking symptoms < 6 months. Patients were excluded from the study if they had a history of mania, schizophrenia, psychosis; were actively suicidal or required hospitalization; had current alcohol or substance abuse or alcohol or substance dependence in the preceding 3 months; were non-responsive to prior citalopram therapy; had prior sensitivity to citalopram or; were pregnant or nursing; or had an uncontrolled medical condition (*e.g.*, hypertension, diabetes). Other exclusion criteria were the presence of clinically significant cardiac disease, malignancy, central nervous system disorder (*e.g.*, Parkinson's disease, dementia), hepatic or renal disease or the use of chemotherapy.

Evaluation procedures

After recruitment, all potential study subjects received a comprehensive psychiatric evaluation to determine eligibility. The evaluation included the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), General health questionnaire (GHQ), Dermatology quality of life index (DLQI). Visual Analogue Scale (VAS) to assess skin-picking behaviors that is rated on a 0-10 scale.

The screening medical work-up included complete medical history, physical examination, complete blood count, comprehensive survey panel, urinalysis, serum beta-HCG (women only), and an electrocardiogram.

Patients began treatment with citalopram at 10 mg/day, the dose was increased to 20 mg/day at the

end of first week, and then participants remained on the same dose for 3 more weeks.

They were seen in follow-up every 2 weeks. If participants tolerated the medication at the second visit after the initial visit, participants completed the VAS, and at the end of trial they completed VAS, GHQ, Y-BOCS, DLQI. Primary outcome measures were the VAS, and all other instruments (GHQ, Y-BOCS, DLQI) were considered ancillary study measures.

RESULTS

Forty five patients were screened for the study and were randomized to trial medication (23 patients in citalopram group and 22 in placebo group). No significant differences were identified between patients randomly assigned to the group 1 or 2 condition with regard to basic demographic data including age, gender, marital status, and mean duration of illness (Table 1). Although the number of dropout in the citalopram group was higher than the placebo group (3 in the citalopram group and 2 in the placebo group), no significant difference was observed in the two groups in terms of dropout.

General Health Status

There were no significant differences between the two groups at week 0 (baseline) on the GHQ (t = 1.64, df = 43, P = 0.108). The difference between the two treatments was significant as indicated by the effect of group, the between-subjects factor (Greenhouse-Geisser corrected: P < 0.001; f = 43.86). The behavior of the two treatment groups was not similar across time (groups-by-time interaction, Greenhouse-Geisser corrected: F = 41.40, df = 1, P < 0.001).

Obsessive Compulsive symptoms

There were no significant differences between the two groups at week 0 (baseline) on the YBOCS total score (t = 0.73, df = 43, P = 0.46). The difference between the two treatments was significant as indicated by the effect of group, the between-subjects factor (Greenhouse-Geisser corrected: P = 0.04; f = 4.28). The behavior of the two treatment groups was significantly different across time (groups-by-time interaction, Greenhouse-Geisser corrected: F = 7.58, df = 1, P = 0.009).

Quality of Life

There were no significant differences between the two groups at week 0 (baseline) on the DLQI total score (t = 1.88, df = 43 P = 0.06).

The difference between the two treatments was significant as indicated by the effect of group, the between-subjects factor (Greenhouse-Geisser corrected: P < 0.001; f = 51.20). The behavior of the two treatment groups was significantly different across time (groups-by-time interaction, Greenhouse-Geisser corrected: F = 37.32, df=1, P < 0.001).

Skin Picking Behavior

There were no significant differences between the two groups at week 0 (baseline) on the VAS score (t = 1.54, df = 43 P = 0.12). The difference between the two treatments was significant as indicated by the effect of group, the between-subjects factor (Greenhouse-Geisser corrected: P < 0.001; and f = 1.28). The behavior of the two treatment groups was similar across time (groups-by-time interaction, Greenhouse-Geisser corrected: F = 0.22, df = 1, P = 0.64). In the citalopram and placebo group, post hoc comparisons showed a significant change from week 2 and 4, respectively (Fig. 1).

In citalopram group paired t test showed significant difference between baseline and second week VAS score (t = 3.45, df = 22, P = 0.002) and there is a significant difference between second

Table 1. Baseline data

	Citalopram group	Placebo group	*P*
Age (mean ± SD)	32.33 ± 10.25 (year)	29.29 ± 10.75 (year)	NS
Gender	Male, 8; female, 15	Male, 5; female,17	NS
Marital status	Single, 5; married, 18	Single, 5; married, 17	NS

Abbreviation: NS, not significant.

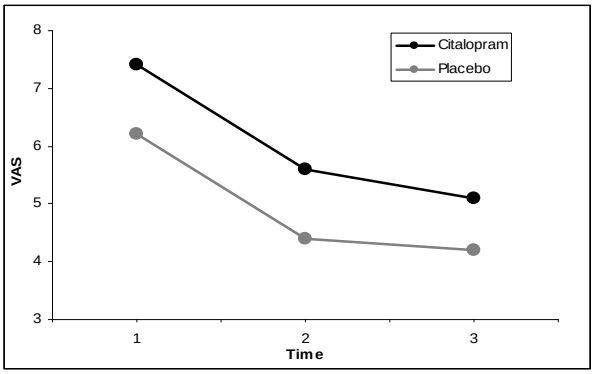

Fig. 1. Mean ± SD of the two protocols on the total scores of the VAS.

week and fourth VAS score (t = 2.14, df = 19, P = 0.04). In placebo group paired t test showed significant difference between baseline and second week VAS score (t = 3.14, df = 19, P = 0.005) but there was not significant difference between second week and fourth visit VAS score (t = 1.45, df = 19, P = 0.16) that showed the decrease of VAS score in citalopram group continued after second week but this decrement of VAS didn't find in the placebo group.

Clinical complications and side effects

Nine side effects were observed over the trial. The difference between the citalopram and placebo in the frequency of side effects was not significant (Table 2).

DISCUSSION

Current pathologic skin picking treatment approaches primarily entail the use of selective serotonin reuptake inhibitors (SSRIs) (15). The paucity of available outcome data makes the treatment of pathologic skin picking a challenge for clinicians.

This is the first randomized placebo controlled double blind study in the literature concerning the efficacy of citalopram in reducing the severity and psychosocial impact of pathologic skin picking symptoms.

As mentioned, both groups of patients showed significant improvement on general health questionnaire, Yale-Brown obsessive compulsive scale, dermatology life quality index and VAS during the 4 weeks of treatment. The citalopram group had significantly greater improvement in the general health status, obsessive compulsive symptoms and quality of life status over 4 weeks trial. No significant differences were observed between the means of the two groups on the VAS scores.

Significant pre-post improvements were not reported for pathologic skin picking behavior measure (VAS) between two groups. This finding is not consistent with other SSRIs trials especially escitalopram in treatment of pathologic skin picking (10). This difference can be explained by short period of study and using a fixed dose of citalopram in the treatment of pathologic skin picking. As mentioned, the decrease of VAS score in citalopram group continued after second week but this decrement of VAS was not found in the placebo group; continuing the trial for a longer period may better show the therapeutic effect of citalopram. Bloch *et al.* pointed that improvement of pathologic skin picking in another SSRI trial, fluoxetine, when it occurs, usually occurs after about 1 month and progresses over 6 weeks or more (28). In our study the therapeutic effect of citalopram started in first 2 weeks and continued over second 2 weeks but the effect of placebo on skin picking behavior started in first 2 weeks and didn't continued during second 2 weeks. This difference showed the effect of citalopram may begin sooner than one month and this effect differ from placebo effect.

In this study citalopram showed significant improvement on general health questionnaire, Yale-Brown obsessive compulsive scale and dermatology quality of life scale during the 4 weeks of treatment. It is difficult to distinguish the main cause of improvement in quality of life status, it may result

Table 2. Number of patients with side effects*

Side effect	Citalopram	Placebo	*P*
Increased sleep	4 (17.3%)	1 (4.5%)	NS
Nausea	1 (4.3%)	2 (9%)	NS
Tremor	1 (4.3%)	0	NS

Abbreviation: NS, not significant.
* Data are given as number (percent).

from improving in general health status and obsessive compulsive symptoms or it may result from the decrease in pathologic skin picking behavior that improve the quality of patients' life. Like Simeon's study, there was no relationship between skin-picking improvement and changes in measures of general health status and obsessive-compulsive symptoms, suggesting that the effect of citalopram on skin picking was a primary one (16).

Improvement in GHQ scores and YBOCS scales in this trial showed the effect of citalopram on these profiles started sooner than its effect on pathologic skin picking behavior. Having these effects can be useful in treatment of patients with pathologic skin picking since they usually have other psychiatric comorbidities like mood disorder or obsessive compulsive dimension disorders.

In summary, this study, the first randomized trial of citalopram in pathologic skin-picking, provides some indirect evidence of drug efficacy for some individuals with this impulse-control disorder. Larger double-blind studies are needed to assess which individuals are likely to respond to citalopram; the relative effectiveness of citalopram, other serotonin reuptake inhibitors, and other treatment approaches; and the biological and psychological differences that separate responders from nonresponders to citalopram treatment. The limitations of the present study, including the short period of study and using only a fixed dose of citalopram, should be taken into account and this indicates the need for further research.

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Conflict of interests

The authors declare that they have no competing interests.

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