

Psychological factors of hyperemesis gravidarum by using the SCL-90-R questionnaire

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Summary

Background: Hyperemesis gravidarum is known as a complex disease with interaction of biological, psychological and sociocultural factors. Our study was an attempt to understand the psychological effects on hyperemesis gravidarum by using an objective scale. **Methods:** Thirty-four pregnant women with hyperemesis gravidarum who were hospitalized in the Obstetrics and Gynecology Department of Dr. Lutfi Kirdar Kartal Education and Research Hospital in Istanbul, Turkey comprised the patient group and asymptomatic pregnant women who came for routine antenatal visits to our clinic were enrolled in this study as the control group between March 1, 2007 and October 15, 2008. Women in both groups filled in the Symptom Check List (SCL-90-R) questionnaire. The data collected from both groups were analyzed by using the Student's t-test (SPSS 13.00). Frequencies of high SCL scores between groups were analyzed by chi-square tests. **Results:** The patients with hyperemesis gravidarum had higher distress scores than those in the control group. The mean value of global severity index (GSI) was 1.03 in the patient group and 0.64 in the control group. The difference was statistically significant ($p < 0.005$). The most significant difference between the two groups was in somatization subscales ($p < 0.0001$). **Conclusion:** Hyperemesis gravidarum is a complex disorder with psychological aspects. Considering this fact can help us deal with the disorder.

Key words: Hyperemesis gravidarum; SCL-90-R; Psychology.

Introduction

Nausea and vomiting in pregnancy are very common; 50-90% of women in early stages of pregnancy are affected by the condition called morning sickness or hyperemesis gravidarum [1, 2].

Hyperemesis gravidarum (HG) is a condition that can accompany persistent nausea and vomiting. It causes dehydration, electrolyte imbalance, ketosis and nutritional deficiencies in pregnant woman. It affects about 0.5-1% of pregnant women [3]. HG can be associated with substantial morbidity including organ damage or retarded fetal growth without proper medical management [4]. Although it is a rare condition, severe hyperemesis is refractory to treatment with fluid and electrolyte replacement and antiemetics. It is associated with multiple hospitalizations, social isolation and psychological morbidity. Women may request termination of pregnancy for intractable, serious hyperemesis or their obstetricians may recommend it [5, 6].

Both physiological and psychological etiologies have been proposed for the condition. High levels of estrogen, human chorionic gonadotropin, increasing levels of androgen hormones and transient maternal hyperthyroidism have been considered for HG [7, 8]. Gastrointestinal etiologies were also investigated in the literature [9, 10].

Moreover, psychological factors like lack of emotional support, depression, and personality disorders have been considered for HG in the literature [11, 12]. Although, there are some studies on the association between hyperemesis gravidarum and psychological factors in the literature, an objective relationship has not been established [13-15].

The Symptom Check List 90 Revised (SCL-90-R) was designed to assess patient self reporting by Derogatis *et al.* [16]. It is a widely used and well searched instrument for investigation of psychological distress and psychopathology. Dag validated the Turkish version of the SCL-90-R in 1991 [17]. Researchers have used the questionnaire to evaluate the Turkish population in the literature [18-20].

An objective relationship between HG and psychological condition has not been well shown in the literature. The SCL-90-R is a good questionnaire to evaluate the psychological condition of patients objectively [21].

We assumed that some of the subscales of the questionnaire express the condition of mental health that could be effective in understanding the psychological condition of hyperemesis. We compared the Global Severity Index (GSI) and somatization (som), obsessive-compulsive (obs), depression (dep), and an additional scale, anxiety (anx), subscales of patients and the control group in this study.

Materials and Methods

The research was conducted prospectively between March 1, 2007 and October 15, 2008 at the Department of Obstetrics and

Gynecology, Dr. Lutfi Kirdar Kartal Education and Research Hospital in Istanbul, Turkey.

The patients were diagnosed with HG based on the following criteria: intractable nausea and vomiting, dehydration, loss of more than 5% of body weight, electrolyte imbalance and ketone bodies in urine samples.

Patients who wanted to participate responded to the SCL-90-R questionnaire. The same number of asymptomatic pregnant women who came for first trimester routine antenatal exams to our outpatient clinic were enrolled in the study as the control group.

Women with a history of psychiatric disorders, endocrine or gastrointestinal disease and multiple pregnancies were excluded from the study. All patients had basic biochemical and urine tests. Patients who had abnormal liver enzyme levels, thyroid function tests or urinary infections were also excluded from the study. The study was explained and written informed consent was given by all patients.

SCL-90-R consists of 90 questions concerning a patient's distress symptoms in the previous seven days [22]. Each item is rated based on the Likert score, a five-point scale (0-4) from "not at all to extremely" [23].

In clinical practice the SCL-90-R is used to reflect the general symptom level or GSI of individuals. The sum of scores rated is divided into the total number of questions (90). The result gives the GSI of the patient. A score more than one is significant for psychological evaluation in the questionnaire.

The SCL-90-R has nine primary symptom dimensions: 90 items in the questionnaire include somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic anxiety, paranoid ideation and psychotic-related questions. They are placed randomly in the questionnaire.

The sum of scores rated by patients for questions related to each symptom dimension is calculated and divided into the total number of those questions. The results are final scores for each item. A score more than one is considered significant in the SCL-90-R.

GSI scores and subscales of the patients and control group were evaluated.

Patients filled in the SCL-90-R questionnaire in a comfortable, quiet room designed for the study. The participants read and answered the questionnaire alone before being hospitalized. The GSI and scores of somatization, obsessive-compulsive, depression, and anxiety subscales were calculated properly according to the questionnaire. Patients with high SCL-90-R scores were consulted at the psychiatric department of the hospital as well.

Data of the study were analyzed with SPSS 13.00. We used the Student's t-test to compare mean values of groups and the chi-square test to compare frequencies. A *p* value less than 0.05 was considered statistically significant.

Results

Thirty-four patients with hyperemesis gravidarum selected according to our research criteria completed the SCL-90-R questionnaire. The mean age was 26 ± 3.7 years (range 18-33 years). The mean age of the 34 patients in the control group was 25 ± 4.8 years (range 18-34 years) with no significant differences. Patient characteristics are shown in Table 1. Women in the control group were approximately 9.6 ± 3.0 gestational weeks

and patients with HG 9.0 ± 2.4 gestational weeks with no significant differences.

SCL-90R questionnaire results are shown in Table 2. The mean GSI score of patients was 1.03 ± 0.57 and the control group's mean GSI score was 0.64 ± 0.48 . The difference was statistically significant ($p < 0.004$). The difference between the two groups was also statistically significant in mean somatization subscale scores ($p < 0.0001$). The highest scores of subscales were in the somatization subscale in the patient group. An additional subscale on eating disorders was not significantly different between the two groups.

High GSI scores (score more than 1) were calculated in 19 women with HG (55.5%) and six patients in the control group (17.6%). The difference between percentages was statistically significant ($p < 0.01$). Frequency of scores higher than one are shown in Table 3. Frequencies of high scores in all subscales were higher in the HG group than in the controls. However, only the anxiety subscale had more patients with a score higher than one in the HG group ($p < 0.05$) (Table 3).

Table 1. — Patient characteristics.

	Groups*	Mean	Std. Deviation	Std. Error (mean)	<i>p</i> values
age	1	26.1176	3.70720	.63578	ns
	2	25.0000	4.77367	.81868	
gravida	1	2.3529	1.29994	.22294	ns
	2	1.9118	1.11104	.19054	
para	1	1.1176	1.09447	.18770	ns
	2	.6471	.77391	.13272	
weeks	1	9.3529	3.22756	.55352	ns
	2	9.4412	1.79547	.30792	

*1: Patients with HG; *2: Control group; ns: Not significant

Table 2. — SCL-90-R results.

	Groups*	Mean	Std. Deviation	Std. Error (mean)	<i>p</i> values
GSI	1	1.0350	.57590	.09877	< .005
	2	.6471	.48109	.08251	
Somatization	1	1.5114	.71589	.12277	ns
	2	.9075	.57545	.09869	
Obsessive-compulsive disorder	1	1.0882	.71423	.12249	< .05
	2	.7422	.64194	.11009	
Depression	1	1.3765	.82743	.14190	< .05
	2	.9644	.72656	.12460	
Anxiety	1	1.1340	.79032	.13554	< .05
	2	.6863	.60083	.10304	
Additional scale	1	1.1114	.90142	.15459	< .05
	2	.8641	.55594	.09534	

*1: Patients with HG; *2: Control group; ns: Not significant.

Table 3. — Frequencies of high scores.

Groups*		GSI	Patients with score > 1			
Total			Som	Ob/Comp	Dep	Anx
1	34	19.00	26.00	17.00	22.00	18.00
2	34	6.00	16.00	11.00	13.00	8.00
	χ^2	9.15	3.7	1.5	3.76	5
	<i>p</i> values	< 0.01	ns	ns	ns	< 0.05

*1: Patients with HG; *2: Control group; ns: Not significant.

Discussion

The SCL-90-R is a self-reporting outcome measure in psychiatric research and primary care settings [23]. It is an objective, measurable and proper method to understand psychological conditions of patients.

GSI and subscales of the questionnaire; somatization, obsessive-compulsive, depression and anxiety and additional subscales of both groups were evaluated according to the SCL-90R questionnaire.

The mean GSI score of patients with HG was higher compared to the control group (Table 2). Additionally, more patients with a GSI score higher than one were in the HG group (Table 3).

The HG group had higher means of subscales except for the additional scale which included questions on eating disorders (Table 2). The somatization score was significantly higher in the HG group than in control group. Table 2 shows the relationship between hyperemesis gravidarum and psychological conditions of patients. Somatization was the most important psychological symptom related to HG in our study group but did not seem to be related to eating disorders.

Studies in the literature have found that somatization can cause some gastrointestinal disorders like irritable bowel syndrome [24, 25]. Our study findings support that somatization disorders were mostly related to HG patients.

When we compared frequencies of high subscale scores, only the anxiety subscale was more frequent in the HG group (Table 3). Increased anxiety symptoms could be the result of the condition as well as the reason for it.

In the literature, studies showed that gastrointestinal disorders are less refractory to treatment when anxiety level falls [26].

Hyperemesis gravidarum is defined as severe nausea and vomiting and consequently a pregnant woman is unable to maintain a good nutritional status. Although more than 50% of women have morning sickness as a result of changes in hormone levels, the cause of hyperemesis is still uncertain [1]. As mentioned above, there are several factors that explain the etiology of the condition: gastrointestinal disorders, elevated hormone levels, and vitamin deficiencies are reported in the literature [27].

We designed this study in an attempt to understand the psychological part of this condition. Uncertain relationships between subscales of the SCL-90-R and unrealistic evaluations of patients are disadvantages of the questionnaire.

The diagnostic efficiency of the SCL-90-R has been well tested [28, 29, 30]. More than 90% of the patients were correctly classified psychologically by using the SCL-90R questionnaire according to Pederson and Karterud's study in 2004 [31]. They found that the traditional SCL-90-R has a high predictive power with respect to any symptom disorder according to DSM-IV. However, the differential predictive power has been reported as less satisfactory [32, 33].

Although GSI and somatization scores of the questionnaire were significantly higher in the HG group, it is difficult to conclude that psychological disorders of pregnant women were the only reason for HG in this study. Patients with hyperemesis are not in a good state of health. Effects of poor health on psychological status of patients are also not clear.

On the other hand, we know that most patients in clinical practice present complex co-occurring symptom disorders [32], and the diagnostic picture has boundaries between many disorders, e.g., depression may be accompanied with anxiety disorder. In the literature it was found that patients with pain-related complaints had high scores on the somatization subscale [33]. Patients with depression reported more emotional distress as a result of that study.

Our study was not aimed at a full psychiatric evaluation of patients. Fell *et al.* found that the relative risk of psychiatric illness is 4.5 among pregnant women with a history of hyperemesis when compared with healthy women [34]. The purpose of our study was to understand the efficacy of the psychological condition on hyperemesis gravidarum. We found that the SCL-90-R is capable of selecting patients who need psychiatric help and that psychological aspects are important in the approach to the disorder.

In conclusion, the SCL-90-R questionnaire is a practical and effective test to screen patients psychologically, especially women who are hospitalized for hyperemesis gravidarum. Severe and intractable cases with high questionnaire scores should especially be evaluated.

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