

# Is hypnosis an effective alternative to medical therapy for hyperemesis gravidarum?

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**Ethics Committee Approval**

The study was approved by Dr. Sami Ulus  
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**Conflict of Interest**

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**Abstract**

**Background/Aim:** Not only because of the deterioration of the general condition of pregnant women, but also considering the extra burden of long hospitalizations, in patients with hyperemesis alternative treatments become even more important. The aim of this study was to determine whether medical hypnosis is an effective and tolerated treatment for nausea and vomiting of pregnancy thus can be a good alternative to medical therapy for pregnant women with severe hyperemesis that would require hospitalization.

**Methods:** A cross sectional study was conducted with 40 pregnant women who were hospitalized for hyperemesis gravidarum between 6-20 weeks of pregnancy. The PUQE test was performed in a face-to-face interview to determine nausea and vomiting severity. All patients were given the same medical treatment and hypnosis was performed with alternate patients after stabilization, by the same trained hypnotist. After the day of hypnosis all patients were again given the PUQE test. The groups were compared according to PUQE test results, the length of hospital stay and the time of first enteral feeding.

**Results:** The groups were similar in terms of socio-demographic characteristics. The median PUQE scores were lower and the median hospitalization time was significantly shorter in the hypnosis group ( $P<0.001$ ;  $P=0.010$ ). The hypnosis group switched to oral nutrition earlier than the control group and this was statistically significant ( $P=0.034$ ).

**Conclusion:** Hypnotherapy should be regarded as the treatment of choice in hyperemesis gravidarum, not only by increasing women's emotional well-being during pregnancy but also reducing unnecessary and prolonged hospitalizations.

**Keywords:** Feeding, Hyperemesis, Hypnosis, Hospitalization, Pregnancy

## Introduction

Nausea and vomiting of pregnancy (NVP) is one of the most common complaints of pregnant women, affecting 70-80% of them in adolescent and reproductive age [1,2]. Although it is generally considered as a physiological condition resolving after 16-20 weeks, hyperemesis, the severe form of NVP, can cause weight loss (exceeding 5 percent of prepregnancy body weight), dehydration, electrolyte disturbances, and it may require hospitalization. It is one of the most common reasons for hospitalization during pregnancy and can affect 0.3-2% of pregnant women [3]. Although it is a condition that seriously decreases the quality of life as well as causing health-related problems, there is still no definite consensus on its etiology. It is thought to be a multi-factorial condition influenced by hormonal, biological and socioeconomic factors. The multifactorial etiology complicates treatment and requires individualization of the treatment. Medical treatments usually lighten the symptoms and improve the general condition of the patient, but unfortunately they are insufficient to relieve nausea and vomiting [4]. In recent years, the lack of medical therapies and possible effects of psychological factors on nausea and vomiting have necessitated an emphasis on alternative treatment methods such as hypnosis [5]. Hypnosis is a state of trance, a special state of consciousness created by suggestion. During this trance, while the person turns off or does not care about all the stimuli coming from the environment (sound, light, smell, etc.), they listen to the hypnotist's suggestions with increased attention, and understand and apply them with voluntary participation [6]. Hypnosis has been recognized by organizations, including the British Medical Association, the American Medical Association and the British Psychological Society as an effective clinical tool. Although there are studies showing that hypnosis is effective in pregnant women with hyperemesis, generally the study groups include a small number of cases. The aim of this study was to determine whether medical hypnosis is an effective and tolerated treatment for NVP thus can be a good alternative to medical therapy in pregnant women with severe hyperemesis requiring hospitalization.

## Materials and methods

A prospective cross-sectional study was conducted with pregnant women who were hospitalized for hyperemesis at the obstetric clinics of a major tertiary maternity hospital in Ankara, Turkey, from November 2020-January 2021. The study group consisted of 40 primigravida pregnant women aged between 20-35 years, who were in viable singleton pregnancies  $\leq 20$  weeks without congenital malformations. Patients with systemic disease that could lead to nausea and vomiting (diabetes, thyroid dysfunction, urinary-hepatobiliary or gastrointestinal disease, hematologic diseases, depressive disorders), threatened abortion, and patients who were not appropriate to hypnotize (obsessive-compulsive disorder or severe psychiatric disorder, patients diagnosed with psychiatric illness) were excluded. Weight loss exceeding 5 percent of prepregnancy body weight, ketonuria unrelated to other causes and vomiting more than three times per day were used as diagnostic criteria for hyperemesis. The study was approved by the Ethics Committee. After giving detailed

information about the study and hypnosis, written informed consent was obtained from all patients.

Gestational age was determined by obstetric ultrasonography. Complete blood count, kidney, liver, thyroid function tests and urinalysis were conducted and recorded. After the patients were hospitalized and their general condition was improved by hydration, a questionnaire (age, educational level and employment status of both the women and their husbands, total monthly income, whether the baby was planned, etc.) prepared by the researcher was applied to collect the socio-demographic characteristics of the study group and PUQE test was applied for determining the frequency and severity of nausea and vomiting with a face-to-face interview.

After this stage, all patients were informed in detail about hypnosis. All patients were given the same medical treatment (hydration, electrolyte replacement in patients with electrolyte imbalance, 10 mg doxylamine succinate and 10 mg pyridoxine hydrochloride) and hypnosis was done with alternate patients. Hypnosis was conducted by the same trained hypnotist for all women, who had the authority and certificate to use hypnosis through the Turkish Ministry of Health. Hypnosis sessions were performed in the patient's room, with the patient and the hypnotist alone. After the day of hypnosis (second day of hospitalization), all patients were again given the PUQE test.

Hypnosis session: After the patient laid in her own bed, she was hypnotized with eye fixation and body relaxation by the hypnotist. The hypnosis was then deepened with the ladder imagery technique. She was then asked to imagine that she was inside a safe place, a stream where the water had healing powers. She was asked to go to the source of the stream and to examine whether there were any obstacles to the flow of the stream and to remove the obstacles that she saw. After removing the obstacles in the stream bed, just like the strong flow of water, she envisioned that her stomach too had been liberated and that her stomach and intestines were performing all their functions in a healthy and natural way. She was ensured that drinking from the stream, with its healing abilities, would cleanse her stomach and intestines, ensure that she ate in a healthy manner, and that the food would easily pass through her stomach to her intestines without any discomfort, that her symptoms would disappear and that she could begin a healthy diet again. Every morning when she awoke, during the afternoon and before night time, she can lift the obstacles in the stream bed by enclosing her right thumb with her other 4 fingers and breathing for a total of 7 times, and in doing so, her gastrointestinal functions will work efficiently, and by drinking from the healing stream water, she can digest all the food without any distress, and finally, be encouraged to internalize that she was happy, peaceful and healthy. All of the patients came out of the hypnosis session with a smile on their face and stated that they felt good, did not have any nausea, and that it felt comforting to know how to deal with their nausea.

The PUQE test was developed by Koren et al. [7] in 2002. It is a simple, clinically relevant and easy to complete scoring system that is one of the most commonly used scales for evaluating the presence and severity of NVP. The test consists of three questions, validated for symptoms that occurred in the past 12 hours, which is based on length of nausea period, the number of times of vomiting and the number of retching episodes. The

total score of the test ranges from 3-15; a score <6 is considered no NVP, 7-12 moderate and ≥13 severe NVP.

The groups were compared according to PUQE test results, hospitalization times and first oral feeding times.

**Statistical analysis**

Statistical analyses were performed using SPSS software (Statistical Package for the Social Sciences, version 24; SPSS Inc., Chicago, IL). As a result of the power analysis using the G\*Power 3.0.10 program, a total of at least 40 samples were found to be sufficient with 90% power, 5% margin of error and 0.265 effect size (n1: 20; n2: 20). Frequency tables and descriptive statistics were used in interpretation of the variables. Continuous variables are presented as median (min-max) and categorical variables are presented as percentages (%). Parametric tests were used for normally distributed variables, otherwise analyses were done with non-parametric tests. In the comparison of two independent groups, "Independent Sample-t" test (t-table value) was used as a parametric test and "Mann-Whitney U" test (Z-table value) was used as a non-parametric test. The "Paired Sample" test (t-table value) was used to compare measurement values of two dependent groups. "Pearson-χ<sup>2</sup> cross tables" were used to examine the relationship between two qualitative variables. P-values <0.05 were considered statistically significant.

**Results**

The socio-demographic characteristics of the patients are shown in Table 1. The groups were found to be similar in terms of age, educational level, employment status, employment status of the spouse, planned pregnancy and total monthly income.

Table 1: Distribution of socio-demographic characteristics and family features of the groups

Characteristic	Study Group (n=20)		Control Group (n=20)		Statistical analysis <sup>+</sup>
	n	%	n	%	
Age (years)					
<25	4	20.0	4	20.0	χ <sup>2</sup> =2.424 P=0.489
25-27	5	25.0	6	30.0	
28-30	3	15.0	6	30.0	
>30	8	40.0	4	20.0	
Educational Level					
Elementary School/Lower High School	8	40.0	9	45.0	χ <sup>2</sup> =0.110 P=0.946
High School	12	60.0	11	55.0	
Employment Status					
Employed	7	35.0	8	40.0	χ <sup>2</sup> =0.107 P=0.744
Unemployed	13	65.0	12	60.0	
Employment Status of Spouse					
Employed	18	90.0	19	95.0	χ <sup>2</sup> =0.360 P=0.548
Unemployed	2	10.0	1	5.0	
Planned pregnancy					
Yes	18	90.0	18	90.0	χ <sup>2</sup> =0.000 P=1.000
No	2	10.0	2	10.0	
Total monthly income (TL)					
<5000	6	30.0	6	30.0	χ <sup>2</sup> =1.511 P=0.680
5.000-7.500	4	20.0	6	30.0	
7.501-10.000	6	30.0	3	15.0	
>10.000	4	20.0	5	25.0	

<sup>+</sup> Pearson-χ<sup>2</sup> cross tables

The median PUQE score of the study group was 11.30 (1.81) (min 8-max 15), the control group was 11.20 (1.64) (min 8-max 14), and there was no significant difference between the two groups in terms of median PUQE scores on the day of hospitalization (P>0.05). Although a significant decrease in the second day PUQE scores (after medical treatment in the control group, and after medical treatment plus hypnosis in the study group) was found for both groups (study group 5.50 (1.36); control group 8.35 (1.92)), the decrease within the experimental group (3.531) was more pronounced than that of the control

group (2.517). The second day median PUQE scores of the study group were lower than the control group, which means that a statistically significant difference was found between the groups in terms of PUQE scores after hypnosis (t=-5.408; P<0.001) (Table 2).

Table 2: Comparison of PUQE scores of the groups

Characteristic	Study group (n=20)		Control group (n=20)		Statistical analysis <sup>+</sup>	Effect Size
	Mean (SD)	Median [IQR]	Mean (SD)	Median [IQR]		
PUQE Scores At the day of hospitalization 2 <sup>nd</sup> day	11.30(1.81)	11.0 [2.8]	11.20(1.64)	11.0 [2.8]	t=0.183 P=0.856 t=-5.408 P<0.001	0.058 1.713
	5.50(1.36)	5.0 [1.8]	8.35(1.92)	8.5 [2.0]		
Statistical analysis	t=15.801 P<0.001		t=11.213 P<0.001			
Effect Size	3.531		2.517			

<sup>+</sup> "Independent Sample-t" test; "Paired Sample" test

The median hospitalization time was 3.50 (1.05) (2- 5 days) in the study group, whereas it was 4.90 (1.80) (2- 8 days) in the control group, which indicates that the hospitalization time was significantly shorter in the hypnosis group (Z=-2.592; P=0.010).

When the groups were compared in terms of their first oral / enteral feeding times, it was found that the hypnosis group switched to oral nutrition earlier than the control group and this was statistically significant (Z=-2.115; P=0.034) (1.80 (0.70) (1-3rd day); 2.40 (0.94) (1- 5th day) (Table 3).

Table 3: Comparison of the groups according to hospitalization time and first oral feeding times

Characteristic	Study group (n=20)		Control group (n=20)		Statistical analysis <sup>+</sup>
	Mean (SD)	Median [IQR]	Mean (SD)	Median [IQR]	
Hospitalization time	3.50 (1.05)	3.5 [1.0]	4.90 (1.80)	5.0 [2.8]	Z=-2.592 P=0.010
First oral feeding time	1.80 (0.70)	2.0 [1.0]	2.40 (0.94)	2.5 [1.0]	Z=-2.115 P=0.034

<sup>+</sup> "Mann-Whitney U" test (Z-value)

**Discussion**

Hyperemesis is the most common and important reason for hospitalization during early pregnancy. Not only the deterioration of the general condition of pregnant women, but also the insufficiency of medical treatment shows the importance of alternative therapies such as hypnosis in recent years. However, there are still limited studies on alternative therapies in patients with hyperemesis. The aim of this study was to determine whether medical hypnosis is an effective and tolerated treatment for NVP thus can be a good alternative to medical therapy in pregnant women with severe hyperemesis requiring hospitalization. This study demonstrated two important findings. First, although a significant decrease in the 2nd day PUQE scores was found in both groups, the decrease within the hypnosis group was more pronounced than that of the control group. Second, the hypnosis group switched to oral nutrition earlier and was discharged from the hospital in a significantly shorter time, which can be a meaningful indicator of the faster improvement of their general condition.

In contrast to women with mild NVP, abnormal laboratory findings (electrolyte, thyroid and liver abnormalities), physical signs of hypovolemia and orthostatic hypotension usually occur in women with hyperemesis, which often requires hospitalization. This distressing situation does not only manifest itself physically in the pregnant woman, but may also cause psychological distress by causing anxiety for both herself and her

baby. Considering the extra burden of long hospitalizations, alternative treatments become even more important.

Although psychotherapeutic techniques are effective, they usually require a long treatment period. The urgency of ensuring the safety of the baby and the mother for a pregnant woman with hyperemesis, whose general condition is very poor, reduces the applicability of these treatments. For this reason, medical hypnosis appears to be a good alternative, especially in patients with severe nausea and vomiting, because of its lack of side effects due to drugs and its rapid response [8]. In their meta-analyses, Hauser et al. [9] examined the efficacy, safety and applications of medical hypnosis for many medical indications, such as pain and labor pain, emotional stress, duration of convalescence, and drug consumption in interventional procedures and operations, and stated that hypnosis was superior to standard treatment or attention control in reduction of stress, pain and drug consumption. In fact, hypnosis has a very long history. In an article published in the British Medical Journal in 1949, it was suggested that hypnosis can be effective in the removal of symptoms of disease [10]. In their study in which they hypnotized 4 pregnant women with persistent nausea and vomiting, Madrid et al. [11] stated that hypnosis was very effective in all 4 patients, all awoke free of nausea after hypnosis and had a healthy pregnancy until they gave birth. According to our results, the significant decrease observed in the PUQE scores of both groups on the 2nd day, shows the effectiveness of medical treatment, which has been the first choice for hyperemesis for years. However, the fact that the decrease in scores was more defined and significant in the hypnosis group is an important finding of our study, it supports the results of other studies in the literature in terms of demonstrating the effectiveness of hypnosis. Similar to the study of Madrid et al., all patients in our study came out of the hypnosis with a smile on their faces and stated that they felt good, did not have any nausea, and that it felt good to know how to deal with the nausea from now on.

The most common problem in patients with hyperemesis is nutritional disorders caused by decreased oral intake [12]. Generally, the inability of patients to tolerate oral nutrition despite treatment is one of the most common problems observed in hospitalized patients. Therefore, we believe that the significantly shorter transition period of the hypnosis group to oral intake is important for pregnant women who require immediate care and resolution of symptoms to ensure their safety and that of their fetus. Another important point about nausea and vomiting in pregnancy is the long-term hospitalization caused by the deteriorated general condition of the mother. It is the second most common diagnosis of antenatal hospitalization with a rate of 11.4% of indications and the mean hospital stay is 2.7 days [13]. Piwko et al. [14] analyzed the economic burden of NVP in the USA and found that the estimated costs for drug treatment for mild and severe NVP were \$40 and \$267, respectively, and the estimated total hospital cost associated with HEG was an average of \$12,453 per patient admission. Considering both the extra burden of medical treatment and long hospitalizations, the importance of the significantly shorter hospital stay in the hypnosis group as we revealed in our study becomes more evident.

Since the use of hypnosis in hyperemesis is still limited, there is still no consensus on the subject, such as which hypnotherapy method to use and how many sessions of hypnosis should be performed for hyperemesis. In their study, Madrid et al. [11] treated four cases with hypnosis who were nauseated throughout their pregnancy. They used a psychodynamic investigation of the cause of the problem and stated that all the patients came out of hypnosis saying that they were no longer nauseous and remained free from nausea till delivery. Torem [15] applied different hypnotic techniques in different patients such as ego strengthening, cognitive restructuring, symbolic guided imagery, future-oriented guided imagery techniques and the hypnotic relaxation suggestion technique, which we used in our study, and concluded that no matter which technique is used, hypnosis is effective in pregnant women with hyperemesis. Fucs et al. [16] stated that the motivation of the patients is more important in the ease and effectiveness of hypnosis rather than the number of sessions, and that hypnosis applied by a trained physician is an important treatment option that may be preferred in the treatment of hyperemesis.

Some points that were considered during the study in order to prevent bias were as follows. All patients were selected from among those who had their first pregnancy in order to prevent the positive and negative effects of their previous pregnancy history. All patients were hypnotized by the same hypnotist with the same technique and in their own rooms to avoid individual differences between the hypnosis sessions.

#### Limitations

The cross-sectional nature of this study, the small number of participants, its homogeneity, and the pregnant women not being followed up after discharge are limitations of this study in interpreting the results and for the future. Larger prospective studies in which the applied hypnosis methods are personalized and various techniques of hypnosis can be compared are needed to clarify the role of hypnosis in hyperemesis gravidarum. Despite these limitations, our work broadens the understanding of the importance of hypnosis in hyperemesis.

#### Conclusion

In conclusion, as hyperemesis is the most common and important reason for hospitalization during early pregnancy, and not only the deterioration of the general condition of the pregnant women, but also considering the extra burden of long hospitalizations, alternative treatments become even more important. Hypnotherapy should be regarded as the treatment of choice in hyperemesis gravidarum, not only by increasing women's emotional well-being during pregnancy but also by preventing many unnecessary and prolonged hospitalizations.

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