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ORIGINAL ARTICLE / ARAŞTIRMA YAZISI

Nutrition and Dietetics / Beslenme ve Diyetetik

Evaluation of the Nutrition and Health Status of Pregnancy According to the Severity of Emezis

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ABSTRACT

Objective: Gestational emesis affects the whole pregnancy process and the newborn baby after pregnancy, starting from the early stages of pregnancy. In this study, it was aimed to investigate the factors affecting gestational emesis.

Materials-Methods: This study evaluated the relationship between the severity of nausea-vomiting and nutrition and health status of 100 pregnant women aged 18-40 years who applied to the Nutrition-Diet and Gynecology Clinic in a private hospital.

Results: The mean age of the participants was 29.66±5.47. It was determined that the severity of vomiting increased as the number of pregnancies of the participants increased ($p<0.05$). It was determined that as the severity of vomiting increased, the energy intake averages of the pregnant women decreased significantly. Those with 'severe' emesis were found to be significantly lower than those with 'moderate' emesis, which derived most of their energy from carbohydrates and fats ($p=0.002$, $p=0.02$, respectively).

Conclusion: Many underlying factors affect the severity of vomiting in pregnant women. The increase in the severity of vomiting adversely affects the nutritional and health status of pregnant women. For this reason, the severity of nausea and vomiting should be taken into account in ensuring proper nutrition and improving health conditions in pregnant women.

Keywords: Pregnancy, hyperemesis gravidarum, nutritional status

Gebelerde Beslenme ve Sağlık Durumunun Emezis Şiddetine Göre Değerlendirilmesi

ÖZET

Amaç: Gestasyonel emezis, gebeliğin erken dönemlerinden başlayarak tüm gebelik sürecini ve gebelik sonrası yeni doğan bebeği etkiler. Bu çalışmada gestasyonel kusmayı etkileyen faktörlerin araştırılması amaçlandı.

Gereç-Yöntem: Bu çalışmada, özel bir hastanede Beslenme-Diyet ve Kadın Hastalıkları Kliniği'ne başvuran 18-40 yaş arası 100 gebenin bulantı-kusma şiddeti ile beslenme ve sağlık durumu arasındaki ilişki değerlendirildi.

Bulgular: Katılımcıların yaş ortalaması 29.66±5.47 idi. Katılımcıların gebelik sayısı arttıkça kusma şiddetinin arttığı belirlendi ($p<0.05$). Kusma şiddeti arttıkça gebelerin enerji alım ortalamalarının önemli ölçüde düştüğü belirlendi. 'Şiddetli' emezisi olanlar, enerjisinin çoğunu karbonhidrat ve yağlardan alan 'orta' emezisi olanlara göre anlamlı derecede daha düşük bulundu (sırasıyla $p=0.002$, $p=0.02$).

Sonuç: Gebe kadınlarda kusmanın şiddetini birçok altta yatan faktör etkiler. Kusmanın şiddetinin artması gebelerin beslenme ve sağlık durumlarını olumsuz etkiler. Bu nedenle gebelerde doğru beslenmenin sağlanması ve sağlık koşullarının iyileştirilmesinde bulantı ve kusmanın şiddeti dikkate alınmalıdır.

Anahtar Kelimeler: Gebelik, hiperemezis gravidarum, beslenme durumu

During pregnancy, biological, physiological, and spiritual changes are experienced. These changes are arranged to prepare pregnant women for motherhood and birth starting from the first weeks of pregnancy (1,2). In addition, gestational diabetes, hypertension, thyroid, cardiovascular diseases, lipid disorders, and emesis are pathological conditions during pregnancy. Therefore, effective treatment of all diseases during pregnancy is crucial for maternal and infant health (3).

Emesis is a vital complaint that affects the daily life of women during pregnancy and reduces their quality of life. In the early pregnancy period, 50-90% of pregnant women may face the problem of emesis (4).

Hyperemesis Gravidarum (HG) is a more severe form of nausea and vomiting during pregnancy. HG is a clinical picture that can progress with severe nausea, vomiting, dehydration, ketosis, electrolyte, acid-base imbalance, and sometimes hepatic and renal failure. Although the incidence of HG varies from society to society, it is generally accepted to be around 0.5-1% (5,6).

Suppose the symptoms are not controlled in hyperemesis pregnant women with significant weight loss, electrolyte, and metabolic disorders. In that case, fetal death may occur by causing low birth weight, growth retardation, risk of preterm birth, fetal anomalies, and even maternal malnutrition (7).

Emesis seen during pregnancy can lead to loss of workforce, the need for hospitalization, and high costs in the health economy by causing the quality of life impairment in women. For these reasons, it is essential to diagnose and treat emesis on time in pregnant women (6).

The research was planned and carried out as a descriptive study in order to evaluate the relationship between nutrition and health status of pregnant women according to the severity of emesis in volunteer pregnant women who applied to the Nutrition-Diet and Obstetrics Polyclinic in a private health institution.

MATERIALS AND METHODS

Participants Selection

This cross-sectional and descriptive study was carried out at Acıbadem Healthcare Group International Hospital, Nutrition-Diet and Gynecology Polyclinic in Istanbul between September 2013 and June 2014. A hundred (100) pregnant women between the ages of 18-40 and at 5-15 weeks of gestation and who agreed to participate in the study were included.

Data Collection

In order to determine the health status, nutritional habits, food consumption status, and severity of emesis of the pregnant individuals included in the study, a questionnaire was applied with the investigation method. In addition, questionnaires were conducted by face-to-face interview method. This applied questionnaire consists of the following sections developed by the researcher.

Participants' demographic data (age, gender), anthropometric measurements (height, weight), body mass index (BMI), education status, job, presence of health insurance, presence and frequency of gestational emesis, number of pregnancies, age at first pregnancy, frequency of feeding, the distribution of food consumed, information about pregnancy (pre-pregnancy weight, gestational week) and history of hospitalization due to emesis were questioned.

BMI was calculated based on height and pre-pregnancy weight. BMI: bodyweight / /height) was calculated with the formula. According to WHO criteria, individuals participating in the study, pre-pregnancy obesity are grouped according to body weight (8).

Pregnancy Unique Quantification of Emesis and Nausea Test (PUQE)

The PUQE test was used to determine the severity of gestational abortion (9). Pregnant women are questioned about the presence of nausea or stomach discomfort in the last 12 hours, whether the vomiting is observed, how many times they have vomited if there is vomiting and the presence of nausea or retching without vomiting. Scoring is done based on the answers to these questions. It was classified as 'mild emesis' in pregnant women with a score between 3-6, 'moderate emesis' with a score between 7-12, and 'severe emesis' in pregnant women with a score between 13-15. In the last part of the questionnaire, the pregnant women's abortion status and their views on this subject, their effects on their psychological status, and social life were questioned.

Evaluation of Food Consumption

The participants' one-day food consumption and food consumption frequency were questioned and evaluated with the "Re-call method". Energy and nutrients

evaluation was made in the Nutrition Information System (BEBIS) program (10). The intake of macronutrients such as energy, carbohydrates, protein, fat, and micronutrients such as vitamins and minerals related to the food consumption of the individuals were determined.

Ethics Committee Approval

The study was presented to Haliç University Clinical Research Ethics Committee and approved by the ethics committee (18/07/2017-32). Permission was obtained from the Chief Physician of Acıbadem University International Hospital. Written informed consent with the Declaration of Helsinki was obtained from study participants.

Statistical Analysis

In the analysis of the data, the mean and standard deviation, minimum and maximum values of the features; Frequency, and percentage values were used to define categorical variables. One Way ANOVA test statistic was used to compare the means of more than two independent groups. If a difference was detected with ANOVA, it was evaluated with Tukey statistics as a Post-Hoc test. Chi-square test statistics were used to evaluate the relationship between categorical variables. The statistical significance level of the data was taken as $p<0.05$. In the evaluation of the data, www.e-picos.com New York software and MedCalc statistical package program were used.

RESULTS

The study was conducted on 100 pregnant participants between 18 and 40 between September 2017 and June 2018. It shows the distribution of the participants according to general characteristics (table 1).

The mean age of the pregnant women was 29.66±5.47 (18-40) years. The mean height of the pregnant women was 163.63±5.22 cm. The gestational week ranged from 5 to 15 weeks, and the mean gestational week was 9.86±2.65. Before pregnancy, the mean weight of the pregnant women was 61.38±10.87 kg, and the current mean weight was 61.370±10.69 kg. When the BMI distribution was examined, 12% of the pregnant women were underweight, 65% were standard, 17% were slightly overweight, and 6% were obese. Considering the educational status, half of the pregnant women (50%) were university graduates. When their employment status was evaluated, it was determined that 46% of the pregnant women were not working, and 54% were working. When the distribution of pregnant women according to the severity of emesis was examined, it was found that 30% had mild, 37% had moderate, and 33% had severe emesis (table 1). There was a statistically significant difference between the severity of emesis according to the functional status of the pregnant women. The rate of severe emesis severity of unemployed, pregnant women (47.8%) was statistically significantly higher than that of employed pregnant women (20.4%) ($p=0.001$). When the pre-pregnancy BMI values of the pregnant women were compared with the severity of emesis, there was no statistically significant relationship between the severity of emesis according to the BMI value ($p>0.05$) (table 2).

Table 1. Distribution of Pregnants by General Characteristics

		Min-Max	Mean±SD
Age (year)		18-40	29,66±5,47
Height (cm)		153-180	163,63±5,22
Gestational week		5-15	9,86±2,65
Bodyweight before pregnancy (kg)		45-104	61,38±10,87
Bodyweight during pregnancy (kg)		46-102	61,370±10,69
N=100	**Features**	**n**	**%**
BMI	Weak	12	12
	Normal	65	65
	Lightweight	17	17
	Obese	6	6
Educational status	Illiterate	1	1
	Primary school	15	15
	Middle School	9	9
	High school	25	25
	University	50	50
Working status	Housewife (Not Working)	46	46
	Working	54	54
Emesis status	Light	30	30
	Middle	37	37
	Heavy	33	33
First gestational age	18 years and under	5	5
	19-25 years	32	32
	26-30 years	36	36
	30 years and older	27	27
Number of Meals Consumed	2 3 4 5 6	6 21 25 19	6 21 25 19

SD: standard deviation, BMI: body mass index, cm: centimeter, kg: kilogram

Table 2. Evaluation of the Severity of Emesis Sccording to the Behavior and Lifestyle of Pregnant Women

N=100		Emesis						p-value
		Light		Medium		Heavy		
		n	%	n	%	n	%	
Working Status	Housewife (Not Working)	16	34,8	8	17,4	22	47,8	0,001
	Working	14	25,9	29	53,7	11	20,4	
BMI	Weak	7	58,3	1	8,3	4	33,3	0,149
	Normal	15	23,1	29	44,6	21	32,3	
	Lightweight	5	29,4	6	35,3	6	35,3	
	Obese	3	50	1	16,7	2	33,3	
How many pregnancies have you had?	1	12	26,1	24	52,2	10	21,7	0,011
	2	11	33,3	10	30,3	12	36,4	
	3	7	46,7	2	13,3	6	40	
	≥4	-	-	1	16,7	5	83,3	
Is your current pregnancy planned?	Yes	21	30,9	26	38,3	21	30,9	0,806
	No	9	28,1	11	34,4	12	37,5	
Meal skipping status	Yes	11	36,7	19	51,4	26	78,8	0,003
	No	19	63,3	18	48,6	7	21,2	
Did the emesis problem require you to be hospitalized?	Yes	1	9,1	2	18,2	8	72,7	0,012
	No	29	32,6	35	39, 3	25	28,1	
Have you been referred to a dietitian because of emesis?	Yes	1	7,7	5	38,5	7	53,8	0,108
	No	29	33,3	32	36,8	26	29,9	

BMI: body mass index, Chi-Square test, p<0.05

When the severity of vomiting was compared with the number of pregnancies, there was a statistically significant relationship between the severity of vomiting and the number of pregnancies (p<0.05) (table 2). Therefore, it was determined that as the number of pregnancies increased, the severity of abortion also increased. However, there was no statistically significant relationship between the currently planned pregnancy status and the severity of emesis (p>0.05). While the incidence of 'severe' emesis was 83.3% in women with four or more pregnancies, moderate emesis was 52.2% in those with their first pregnancy (table 2).

When skipping meals of pregnant women were compared according to emesis severity, a statistically significant relationship was found between emesis severity and meal skipping (p<0.01). Furthermore, it was determined that the rate of skipping meals increased as the severity of emesis increased.

A statistically significant correlation was found between the severity of emesis of pregnant women according to hospitalization status due to emesis (p<0.05). The incidence of severe emesis in pregnant women hospitalized for emesis was significantly higher than those who were not hospitalized. There was no statistically significant relationship between the severity of vomiting and referral to a dietitian after vomiting (p>0.05) (table 2).

When the severity of emesis and the number of nutrients consumed by the pregnant women for a day were compared, there was a statistically significant relationship between the daily energy intake averages of the pregnant women according to the severity of emesis (p<0.05).

The mean daily energy intake of the cases with severe emesis severity was significantly lower than those with mild emesis severity. There was a statistically significant correlation between the daily protein averages of the pregnant women according to the severity of emesis. The mean daily protein intake of the cases with severe emesis

severity was significantly lower than those with mild emesis severity (p<0.05). There was a statistically significant relationship between pregnant women's mean daily fat intake according to the severity of emesis (p<0.05). The mean daily fat intake of the cases with moderate emesis severity was significantly higher than those with severe emesis severity (p<0.05). In addition, according to the severity of emesis, there was a statistically significant difference between the daily energy averages of the pregnant women (p<0.01).

The mean daily fat intake rate of cases with moderate emesis severity was significantly higher in pregnant women with severe emesis severity (p<0.01). According to the severity of emesis, there was a statistically significant relationship between the daily carbohydrate ratios of the pregnant women (p<0.05). The mean daily carbohydrate intake rate of the cases with moderate emesis severity was significantly higher than those with severe emesis severity (p=0.02) (table 3).

Table 3. Evaluation of Daily Consumed Food Items According to Emesis Severity

	Emesis Severity			*p-value*
	Light	Medium	Heavy	
	Mean±SD	Mean±SD	Mean±SD	
Energy (kcal)	1240,3±186,59	1219,31±201,38	1105,29±269,24	**0,036***
Protein (g)	62,14±12,45	64,8±16,22	55,24±14,93	**0,027***
Protein (%)	20,57±4,58	21,57±4,11	20,34±3,71	0,424*
Fat (g)	42,87±14,4	45,23±12,33	35,84±12,67	**0,012***
Oil (%)	30,2±6,86	32,84±6,33	27,5±5,76	**0,003***
Carbs (g)	149,42±33,63	135,45±26,08	140,78±28,94	**0,159***
Carbs (%)	49,3±7,71	46,35±7,42	51,09±6,34	**0,024***
Water (g)	1075,17±275,05	1103,25±257,66	1012,64±300,08	0,393*
Phosphorus (mg)	1170,19±273,73	1191,05±308,73	1164,72±249,27	0,918*
Fiber (g)	20,78±4,91	21,21±5,28 (21,03)	18,95±5,22 (18,44)	0,205**
Polyunsaturated (g)	9,13±3,43 (8,53)	9,07±3,73	6,74±2,64	0,172*
Cholesterol (mg)	164,54±109,46 (114,6)	191,47±104,59 (224,8)	127,75±117,21 (78,9)	**0,041****
Vit. A (µg)	1333,25±416,56	1494,97±533,98	1110±564,18	**0,01***
Carotene (mg)	4,97±1,4	5,35±2,04	4,16±2,25	**0,032***
Vit.E (mg)	11,04±3,46	11,16±3,4	8,85±3,11	**0,008***
Vit. B1 (mg)	0,79±0,17	0,83±0,18	0,73±0,16	**0,041***
Vit. B2 (mg)	1,4±0,34	1,41±0,4	1,39±0,32	0,959*
Vit. B6 (mg)	1,13±0,23	1,18±0,26	1,08±0,27	0,239*
Total folic acid (µg)	235,35±57,6	259,42±59,26	237,02±56,2	0,159*
Vit. C (mg)	116,87±46,2	129,7±53,31	107,82±43,27	0,170*
Sodium (mg)	2705,56±706,85	2516,96±636,66	2544,89±547,38	0,442*
Potassium (mg)	2255,62±472,44	2378,36±583,88	2153,56±527,32	0,221*
Calcium (mg)	851,16±242,6	852,01±292,85	911,97±204,35	0,539*
Magnesium (mg)	224,74±62,52	240,25±55,47	209,32±61,76	0,105*
Iron (mg)	9,0±1,9	9,21±1,9	7,87±2,11	**0,014***
Zinc (mg)	9,3±2,35	9,02±2,19	8,13±2,02	0,092*
Lactose (g)	9,54±6,08 (8,5)	10,55±6,63 (10,43)	9,94±5,87 (8,19)	0,836**
Starch (g)	87,29±29,16	70,88±22,45	82,19±22,16	**0,022***
Galactose (g)	2,25±0,95 (2,32)	1,96±1,09 (2,05)	2,41±1,21 (2,16)	0,379**
Vit. B12 (µg)	5,05±1,95	5,02±2,04	4,47±2,32	0,462*

*SD: standard deviation, kcal: kilocalories, g: gram, mg: milligram, µg: microgram, Vit: vitamin, *Oneway ANOVA test, **Kruskal Wallis test, p<0,05.*

There was a statistically significant relationship between the mean amount of vitamin A taken by the pregnant women according to the severity of emesis. The mean daily Vitamin A intake of pregnant women with moderate emesis severity was statistically significantly higher than those with severe emesis severity ($p<0.01$). There was a statistically significant difference between the mean daily intake of Vitamin E according to the severity of emesis ($p<0.01$). The mean daily Vitamin E intake of the pregnant women with mild emesis and the cases with moderate emesis severity was significantly higher than those with severe emesis severity. There was a statistically significant difference between the mean daily intake of Vitamin B1 according to the severity of emesis ($p<0.05$). Daily Vitamin B1 means of pregnant women with moderate emesis severity was significantly higher than those with severe emesis severity ($p<0.05$). According to the severity of emesis, there was a statistically significant relationship between the daily iron mineral averages of the pregnant women. The mean daily iron intake of cases with moderate emesis severity was significantly higher than those with severe emesis severity (table 3).

DISCUSSION

Nausea and vomiting, an essential determinant of pregnancy, turns into a significant health problem as its frequency and severity increase. Mild emesis complaints are present in 50-70% of pregnant women in the first months of pregnancy. It typically starts at 4 to 8 weeks of pregnancy and lasts until 14 to 16 weeks. Since the clinical picture usually occurs in the morning, it is also called 'morning sickness' (4).

BMI values of 65% of the pregnant women between the ages of 18 and 40 who participated in the study were between 18.5-25. Thus, most of the pregnant women participating in the study had normal BMI. Irge et al. similarly, it was found that 68.3% of the pregnant women had typical BMI values (11). Women who gain weight within the recommended limits during pregnancy have the healthiest pregnancy outcomes regarding maternal and fetal conditions (low birth weight, macrosomia, spontaneous preterm birth rates, cesarean delivery, maternal postpartum obesity) (12). In our study, the BMI value, an important parameter, and the severity of abortion were compared, and no statistically significant result was found ($p>0.05$). However, Sucu et al. found that the mean weight and body mass index of patients with severe acupuncture severity were significantly lower than those with mild acupuncture severity (13).

Tas et al., in the study, were conducted to evaluate the nutritional status of pregnant women; it was determined that the majority of the participants (82.3%) were housewives (12). When we evaluated whether there is a relationship between the active status of pregnant women and the severity of emesis in our study, the severity of emesis in housewives was found to be statistically higher than that of working pregnant women ($p<0.01$). This can be explained by the increase in occupations with working life and the inability of pregnant women to listen to themselves enough to experience severe nausea and vomiting. On the other hand, in Ozdil et al., no significant relationship was found between pregnant women with and without hyperemesis, employment status, education level, and income level (14).

In our study, the majority of pregnant women (68%) with a first gestational age of 19-30. It is known that the first gestational age is essential for a healthy pregnancy and healthy birth. Pregnancy at a very early age and in advanced ages may increase the risk of some abnormal conditions (9). Shallow et al. found in their study that the frequency of emesis was higher in early-age pregnancies (15).

It is known that unwanted pregnancies and having many pregnancies can have negative consequences on individuals (16). When the number of pregnancies and the severity of vomiting were compared, it was found that there was a statistically significant agreement between them. As the number of pregnancies increased, the severity of abortion also increased. In our study, no statistically significant difference was found between the currently planned pregnancy status and the severity of emesis. Moos MK reported that the pregnancies of cases with high severity of nausea were unplanned pregnancies at a high rate (17).

In our research, the number of meals consumed four or more constitute 73% of the study. Noğay et al. In the study conducted to evaluate pregnant women's nutritional status, a large part of the participants (55.7%) skipped lunch. Pregnant women stated that they got up late (45.5%) for skipping meals (18). Irge et al., in their study, it was determined that 81.2% of the women had nutritional problems during pregnancy, and 33.2% of the pregnant women did not eat regularly and skipped meals (11). In our study, when skipping meals of pregnant women were compared according to the severity of emesis, it was found to be statistically related ($p<0.01$). It is seen that as the severity of emesis increases, skipping meals also increases. It was

determined that pregnant women with severe emesis skipped meals due to nausea.

In our study, those who were hospitalized due to emesis constitute 11% of the study. Ozdil et al. In his study, the mean duration of hospital stay of 41 pregnant out of 100 hospitalized for hyperemesis was determined as 5.2±2.7 days, and the mean amount of weight loss was 4.5±3 kg (14). Another study showed that the hospitalization of pregnant women with severe nausea or vomiting is critical in understanding their physical and psychological problems and increasing the quality of care (7).

In the study of Koren et al., 2.5% of the mild abortion group, 6% of the moderate group, and 33% of the severe group received indications for hospitalization, and the difference between the severe group and the other groups was found to be statistically significant (9). In our study, the severity of vomiting was statistically significantly higher in pregnant women hospitalized after vomiting than pregnant women treated as outpatients.

Pregnant women who were referred to a dietitian about emesis constitute 13% of the study. In our study, no statistically significant relationship was found between the severity of abortion and being referred to a dietitian. Işık et al. In his study, it was determined that pregnant women received information about the problems in pregnancy primarily from health personnel, dieticians, and unique books. In the same study, it was determined that the most common and most common disorders were emesis (91.4%) (3). In another study, half of the participants stated that they received information from health personnel about what to do in vomiting (2).

Swensen et al., in their study, the one-day energy intake of pregnant women was below the recommended (20). In Fejzo and Poursharif, similar to our study, the average energy intake of women diagnosed with HG was examined. In the study results, weight loss in HG was defined as > 15.0% of the pre-pregnancy weight, and it was stated that 26.1% of women experienced excessive weight loss due to insufficient energy intake (21). In our study, daily energy intake was well below the recommendations, especially in individuals with severe abortion severity.

In our study, daily protein ratios of pregnant women from energy were compared according to the severity of emesis, but no statistically significant difference was found. However, the daily protein intake of pregnant women according to the severity of suckling showed a statistically significant difference. In our study, the amount of daily protein intake was found to be 55.24±14.93 g in patients with severe emesis. A developing baby's body cells, changes in the mother's body, especially the placenta, need protein. In addition, the baby's growth in the mother's womb means an average of 950 g of protein accumulation. Therefore, pregnant women need an extra 20 grams of protein daily (22).

Our study determined that there was a significant difference between the severity of emesis and the rates of energy from daily fat and carbohydrates. It is recommended that 55-60% of daily energy comes from carbohydrates and 25-30% from fats during pregnancy (23). In our study, the daily energy intake of carbohydrates from patients with moderate emesis severity was significantly higher than those with severe emesis. Daily carbohydrate intake rates of pregnant women with severe emesis were found below the recommended value. When the fat intake rates of pregnant women were examined, it was seen that it was within the recommended limits for people with severe vomiting. However, the daily fat intake rates of patients with moderate emesis severity were significantly higher than those with severe emesis severity.

Our study observed that the only significant difference between the average daily mineral intake of pregnant women according to the severity of emesis was iron. The mean daily iron intake of the cases with moderate emesis severity was significantly higher than the cases with severe emesis severity. The daily recommended amount of iron was found below the recommendations for all emesis intensities. Studies have also shown that the use of iron preparations during pregnancy may trigger emesis. It has also been reported that iron use can be interrupted when emesis is severe (13).

CONCLUSION

Nausea and vomiting, an essential determinant of pregnancy, turns into a significant health problem as its frequency and severity increase. As the severity of nausea and vomiting increases, it is a condition that should be identified and treated immediately, as it can threaten the health status of pregnant women.

The most important result of our study is that the severity of emesis and nutritional status are seriously affected. Based on this result, it is necessary to detect emesis and monitor the nutritional status to maintain and terminate the pregnancy in a healthy way.

DECLARATIONS

Conflict of Interest

There is no conflict of interest in our work.

Ethical Approval

The study was presented to Haliç University Clinical Research Ethics Committee and approved by the ethics committee (18/07/2017-32).

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