

Refusal of the hospitalization: a distressed dilemma in obstetric practice

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Abstract

Background: Pregnant women are a special population in which hospitalizations are more recommended due to physiological changes mimicking pathologies and medico-legal concerns.

Objectives: We aimed to assess the obstetric outcomes of expectant mothers who were admitted to the obstetrics emergency outpatient clinic and declined the hospitalization advised by doctors. Additionally, we examined the appropriateness of physicians' recommendations.

Design: We have retrospectively evaluated the patients admitted to the 'Obstetric Emergency Outpatient Clinic' and refused hospitalization between 1 January 2019 and 31 December 2019.

Methods: Cases were classified into three groups based on the trimester, considering the substantial variation between complaints and complications in each trimester. The complaints of pregnant women were categorized as psychosocial causes, obstetric complications, maternal systemic complaints, and suspicion of labor. We evaluated the compatibility of the hospitalization decision with the pregnancy outcome of patients.

Results: A total of 958 pregnant women were included in the study. Leading causes for admissions were obstetric complications, maternal systemic complaints, and suspicion of labor in first, second, and third trimesters, respectively. Psychosocial causes were mostly observed in the second trimester. Readmission to the hospital within a week was highest in the third trimester group. According to pregnancy outcomes, 12.5% (94/753) of our recommendations were appropriate in all trimesters.

Conclusion: Obstetricians seem overcautious in managing obstetric patients and willing to offer hospitalization more often than the actual requirements.

Keywords: obstetric emergency, obstetric outcome, pregnancy, refuse hospitalization

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Introduction

Pregnancy is a stressful condition going together with adaptive physiological changes.^{1–5} These physiological changes may influence the course of maternal systemic disorders and they may be the reason for increased emergency department admissions, especially in high-risk pregnancies. Misinterpretation of pregnancy-related changes may also be the source of exaggerated hospital admissions. Furthermore, social, economic, administrative, political, educational, and legal factors influence the attitudes of both patients and physicians, and the differences in these factors

create divergencies in daily clinical practice.^{6,7} All these factors may give rise to unnecessary hospitalizations leading to a serious economic burden for healthcare systems.⁸

On the other hand, patients have the right to choose their own treatment modalities and this is defined as patient autonomy.^{9–11} Pregnant women sometimes refuse the recommendations of their physicians and this may be a challenging issue in routine practice as their decisions may result in unfavorable outcomes.¹² Thus, the balance between the appropriate indications and

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inappropriate approaches should be maintained. This subject has been explored in prior research, which has concluded that there is an increase in nonurgent admissions of pregnant women during the pregnancy period.¹³ Although the indications for such cases have been defined, it has been recognized that there is a need for additional data on admissions of pregnant women to emergency departments.¹⁴ At this point, knowing the experiences of tertiary medical centers about this dilemma is crucial. Evaluation of emergency department admissions in the pregnant population may guide physicians to have better management protocols and appropriate analysis of these data may decrease the cost of healthcare expenditures.

In this study, we evaluated the complaints of the patients who were admitted to the emergency obstetric ward and refused hospitalization. We have also evaluated the compatibility of decisions of physicians with the gestational outcomes of pregnancies.

Material and methods

The outcomes of pregnant women who applied to the 'Obstetric Emergency Ward' of the Department of Obstetrics and Gynecology (Hacettepe University, Ankara) and refused hospitalization between 1 January 2019 and 31 December 2019, were retrospectively evaluated in this study. The required data were obtained from received informed consent forms at the emergency department and from the electronic database of our institution.

The study was conducted at Hacettepe University Hospital where Research Assistants evaluated patients. Fellow Doctors made decisions about hospitalization. Patients who declined admission provided informed consent and were informed about potential emergent situations related to their complaints. The Fellow Doctors determined the follow-up visit for patients who refused hospitalization based on patients' complaints.

Pregnant women were divided into three groups based on pregnancy trimesters: first trimester group (<14th gestational week), second trimester group (14th–28th gestational week), and third trimester group (>28th gestational week). Maternal age, gravidity, parity, number of previous miscarriages,

number of living child, and gestational week of admission were compared between the three groups.

The complaints of pregnant women were categorized into four main headings as psychosocial causes, obstetric complications, maternal systemic complaints, and suspicion of the onset of labor. These four categories were also compared between the trimester groups. Maternal fear and anxiety were regarded as psychosocial group. Vaginal bleeding, hyperemesis gravidarum, premature rupture of membranes, fetal growth restriction, amniotic fluid abnormalities (oligo/polyhydramnios), placentation anomalies, and preeclampsia were included in the obstetric complications group. Complaints associated with respiratory, cardiovascular, gastrointestinal, genitourinary, and endocrine systems were regarded as maternal systemic complaints.

Thereafter, the time intervals between the refusal of hospitalization and readmission to the hospital (within the first week, 7–14 days, 14–21 days, 21–28 days, and >28 days) were calculated and compared between the trimester groups.

We have evaluated the final pregnancy outcomes of patients. The accuracy of the indications for hospitalization was assessed by a retrospective review of the indications and relevant international guidelines. If the outcome of the defined pregnancy was consistent with the physician's recommendation and/or the related guideline, it was considered an accurate recommendation.

Statistical analyses were performed using the Statistical Package for the Social Sciences program (SPSS 22, IBM SPSS Statistics for Windows, Version 22.0; IBM Corp., Armonk, NY, USA). The Kolmogorov–Smirnov test was used to evaluate normal data distribution. Because data were not normally distributed, the median values together with interquartile range (IQR) values were used for continuous variables. Chi-square or Fisher exact test was used to compare categorical variables. The relevant data were summarized as the median and IQR. A *p* value of <0.05 was considered as statistically significant.

The reporting of this study conforms to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement.¹⁵

Table 1. Demographic and clinical characteristics of participants and comparison by trimesters.*

Feature	Total	First trimester	Second trimester	Third trimester	<i>p</i> Value
Maternal age	27 (IQR: 7)	28 (IQR: 9)	28 (IQR: 9)	27 (IQR: 7)	0.81
Gravidity	2 (IQR: 2)	2 (IQR: 2)	2 (IQR: 2)	2 (IQR: 2)	0.533
Parite	0 (IQR: 1)	1 (IQR: 1)	0 (IQR: 1)	0 (IQR: 1)	0.199
Number of miscarriages	0 (IQR: 0)	0 (IQR: 1)	0 (IQR: 1)	0 (IQR: 0)	0.571
Number of living child	0 (IQR: 1)	0 (IQR: 1)	0 (IQR: 1)	0 (IQR: 1)	0.185

*Data were presented as median (IQR).
IQR, interquartile range.

Table 2. Comparison of the reasons for admission according to trimesters.

Reasons for admission to hospital	First trimester, <i>n</i> (%)	Second trimester, <i>n</i> (%)	Third trimester, <i>n</i> (%)	Total, <i>n</i> (%)	<i>p</i> Value
Psychosocial causes	10 (22.2%)	64 (33.9%)	146 (28.1%)	220 (29.2%)	<0.001
Obstetric complications	32 (71.1%)	54 (28.6%)	142 (27.4%)	228 (30.3%)	<0.001
Maternal systemic complaints	3 (6.7%)	71 (37.6%)	82 (15.8%)	156 (20.7%)	<0.001
Suspicion of labor	0	0	149 (28.7%)	149 (19.8%)	<0.001
Total	45 (100.0%)	189 (100.0%)	519 (100.0%)	753 (100.0%)	

Results

A total of 958 pregnant women who signed the hospitalization refusal form were evaluated in the study. The median age of all pregnant women was 27 (IQR: 7). The median gestational week at admission to the obstetric emergency ward was 10 (IQR: 3), 23 (IQR: 6), and 35 (IQR: 6) in the first trimester, second trimester, and third trimester groups, respectively. A total of 205 of these pregnant women were excluded from further analysis because they did not reapply to our institution. Lost to follow-up rates were 30.8%, 29.7%, and 16.8%, in the first, second, and third trimesters, respectively.

Demographic and clinical features of patients were summarized in Table 1 and no statistically significant difference was observed in the comparison according to trimesters ($p > 0.05$). Statistically significant differences were found in the reasons for admission to the hospital between these three trimester groups (Table 2). Leading causes for admissions were obstetric complications, maternal systemic complaints, and suspicion of

labor in first, second, and third trimesters, respectively ($p < 0.001$ for all). Psychosocial causes were mostly observed in the second trimester ($p < 0.001$). The suspicion for the onset of labor was 28.7% of third trimester admissions.

The first admission time for the same complaint after refusing hospitalization was compared in all trimesters (Table 3). Duration of readmission to hospital >28 days was highest in the first trimester group while the duration of readmission to hospital within a week was highest in the third trimester group ($p < 0.001$ for all).

When the 'suspicion of labor' category was examined in detail to check whether it was true labor, it was found that 34 of 149 patients (22.8%) who were offered hospitalization for uterine contractions were delivered within 24 h. According to pregnancy outcomes, 12.5% (94/753) of our recommendations were found to be appropriate in all trimesters ($p = 0.03$). Table 4 summarizes the accuracy of our hospitalization recommendations by trimesters.

Table 3. Comparison of the interval between the hospitalization recommendation and subsequent examination.

Interval	First trimester, n (%)	Second trimester, n (%)	Third trimester, n (%)	Total, n (%)	p Value
Within a week	7 (15.5%)	16 (8.4%)	151 (29%)	174 (23.1%)	<0.001
7–14 days	5 (11.1%)	38 (20.1%)	197 (37.9%)	240 (31.9%)	<0.001
14–21 days	6 (13.3%)	64 (33.8%)	130 (25%)	200 (26.6%)	<0.001
21–28 days	10 (22.2%)	18 (9.5%)	20 (3.8%)	48 (6.4%)	<0.001
>28 days	17 (37.7%)	53 (28%)	21 (4%)	91 (12.1%)	<0.001
Total	45 (100.0%)	189 (100.0%)	519 (100.0%)	753 (100.0%)	

Table 4. Comparison of the appropriateness of hospitalization indications according to the trimesters.

Appropriateness	Suggestion for hospitalization		Total	p Value
	Appropriate, n (%)	Inappropriate, n (%)		
First trimester	7 (15.6%)	38 (84.4%)	45	0.03
Second trimester	10 (5.3%)	179 (94.7%)	189	
Third trimester	77 (14.8%)	442 (85.2%)	519	
Total	94 (12.5%)	659 (87.5%)	753	

Discussion

The refusal rate for hospitalization/treatment among emergency department admissions was reported to be approximately 3%.¹⁶ There are various studies in the literature evaluating the reasons and refusal rate of patients who admitted to the emergency departments.^{12,17–19} However, our knowledge of pregnant women who were admitted to obstetric emergency wards and refused hospitalization is still limited. Thus, the experiences of reference centers are valuable to establish more appropriate management protocols. In this cohort, we have evaluated the admission incentives/complaints and the hospitalization refusal rates of pregnant women in terms of gestational trimesters.

According to an epidemiological study, the most common complaint of pregnant women who applied to the emergency department was abdominal pain.²⁰ In our study, analysis with regard to trimester-based evaluation demonstrated that

obstetric complications were the most common indication for the first trimester, while maternal systemic complaints and suspicion of labor were the leading incentives at the second and third trimesters, respectively.

In this study, maternal systemic complaints and psychosocial causes were the most common reasons for admission in the second trimester. Maternal physiology begins to alter in the first trimester, whereas clinical changes mostly peak in the second trimester for the cardiovascular, renal, or respiratory systems.^{4,21–23} Consistent with the timing of these systemic changes, our patients' systemic complaints were found to increase significantly in the second trimester. All these physiological changes may mimic the symptoms of systemic diseases and misguide physicians. Therefore, the physicians may recommend hospitalization for further examination for differential diagnosis. Additionally, they may affect the mood of the patients leading to an increase in

psychosocial complaints during emergency department admissions. In this study, psychosocial causes, obstetric complications, and maternal systemic complaints were found to be the reason for admissions in 33.9%, 28.6%, and 37.6% of the second trimester cases, respectively.

In the third trimester, the most common reason for admission was, as expected, suspicion of the onset of labor. Hospitalization and close follow-up may be required to determine true labor in a pregnant woman with uterine contraction. This is an important reason why hospitalization is recommended in patients with contraction complaints. In this study, only 22.8% of patients who were offered hospitalization for suspected labor were delivered within 24h.

The main purpose of this study was to evaluate the relevance of our medical management and hospitalization recommendations. The outcome was consistent in 15.6% of the patients in the first trimester. Strikingly, only 5.3% of the indications were found to be appropriate in the second trimester. This can be explained by being apprehensive to distinguish the physical changes of pregnancy from possible internal disease. Furthermore, only 14.8% of the indications for hospitalization in the third trimester were appropriate. These findings are important as they show that most of our recommendations for hospitalization are excessive compared to the available literature. Over-cautiousness and medico-legal concerns seem to have an important place in physicians' recommendation for hospitalization.

Considering the limited resources, cost-effective issues have become an integral part of the healthcare policies all around the world.²⁴ For this reason, detecting and limiting unnecessary expenses is crucial to use these resources for more useful purposes. Hospitalization is especially a major financial burden for healthcare systems as it causes direct and indirect economic losses.²⁵ Furthermore, it may lead to various life-threatening complications like deep vein thrombosis and nosocomial infections.^{8,26,27} Thus, physicians should be careful when recommending hospitalization for their patients. Medico-legal issues should also be the concern of physicians during these processes.

The main limitations of this study are the retrospective design and evaluation of indications from patient files and the database of our institution.

Further prospective studies must be designed for confirming our results and to include patient and physician-related factors to have better results. On the other hand, the number of cases and the comparison of various variables between trimesters are the strengths of this study.

In conclusion, obstetricians seem overcautious in managing obstetric patients and willing to offer hospitalization more often than the actual requirements.

Declarations

Ethics approval and consent to participate

This study was approved by the institutional ethics committee of Hacettepe University (GO 20/169). Written informed consent of the study participants was taken and study was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Author contributions

Canan Unal: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Resources; Validation; Visualization; Writing – original draft.

Erdem Fadiloglu: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Resources; Software; Supervision; Validation; Visualization; Writing – original draft.

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Competing interests

The authors declare that there is no conflict of interest.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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