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Behçet's Disease and Pregnancy: A Retrospective Cross-Sectional Study on the Risk of Preterm Birth and the Role of Mucocutaneous Activity

Behçet Hastalığı ve Gebelik: Erken Doğum Riski ve Mukokütanöz Aktivitenin Rolü Üzerine Retrospektif Kesitsel Bir Çalışma

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ÖZ

Amaç: Bu çalışma, Behçet hastalığı (BH) olan kadınlarda tanı öncesi ve sonrası gebelik sonuçlarını değerlendirmeyi ve karşılaştırmayı amaçladı.

Gereç ve Yöntemler: Bu retrospektif kesitsel çalışmaya BH tanısı alan 30 kadının 100 gebeliği dahil edildi. Klinik özellikler, tedaviler ve obstetrik sonuçlar incelendi. Gebelik sonuçları, BH tanısı öncesinde ve sonrasında gerçekleşen gebelikler arasında karşılaştırıldı. Ayrıca, olumsuz sonuçlar olmadan canlı doğumla ilişkili faktörler analiz edildi.

Bulgular: 100 gebeliğin 52'si tanı öncesinde, 48'i tanı sonrasında gerçekleşmişti. Tanı sonrası grupta doğum haftası anlamlı olarak daha düşük bulundu ($p < 0.001$), preterm doğum oranı daha yüksekti (%25,7 ve %7,3; $p = 0.03$) ve sezaryen doğum oranları artmıştı (%54,3 ve %19,5; $p = 0.002$). Düşük, yenidoğan yoğun bakım yatışı, yenidoğan sarılığı, anomali veya perinatal mortalite açısından anlamlı fark saptanmadı. Çok değişkenli analizde eritema nodozum olumsuz gebelik sonuçlarının tek bağımsız prediktörü olarak bulundu (OR 5,66; %95 GA: 1,07–29,92; $p = 0.041$).

Sonuç: BH tanısı sonrasında gerçekleşen gebelikler, önceki gebeliklere göre preterm doğum ve sezaryen doğum açısından artmış risk ile ilişkilidir. Eritema nodozum varlığı, olumsuz obstetrik sonuçlarla bağımsız olarak ilişkili bulunmuştur.

Anahtar Kelimeler: Behçet, Gebelik, Preterm, Sezaryen, Kolşisin

ABSTRACT

Aim: This study aimed to evaluate and compare the pregnancy outcomes of women with Behçet's disease (BD) before and after the diagnosis.

Materials and Methods: This retrospective cross-sectional study included 100 pregnancies from 30 women diagnosed with BD. Clinical characteristics, treatments, and obstetric outcomes were assessed. Pregnancy outcomes were compared between those occurring before and after BD diagnosis. Additionally, factors associated with live birth without adverse outcomes were analyzed.

Results: Of the 100 pregnancies, 52 occurred before and 48 after the diagnosis of BD. The post-diagnosis group had markedly lower gestational age at delivery ($p < 0.001$), a higher rate of preterm birth (25.7% vs. 7.3%, $p = 0.03$), and increased cesarean delivery rates (54.3% vs. 19.5%, $p = 0.002$). No significant differences were observed in miscarriage, NICU admission, neonatal jaundice, anomaly, or perinatal mortality. In multivariate analysis, erythema nodosum was the only independent predictor of adverse pregnancy outcomes (OR 5.66, 95% CI: 1.07–29.92, $p = 0.041$).

Conclusion: Pregnancies following the diagnosis of BD are associated with increased risks of preterm birth and cesarean delivery. Patients with erythema nodosum was independently associated with adverse obstetric outcomes. Close monitoring remains essential to optimize maternal and fetal health in patients with BD.

Keywords: Behcet, Pregnancy, Preterm, Cesarean, Colchicine

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INTRODUCTION

Behçet's diseases (BD) is a multisystemic vasculitis characterized by systemic manifestations that may impact the gastrointestinal tract, neurological system, vascular systems, and joints, in addition to recurring oral and vaginal ulcers, ocular involvement, and cutaneous lesions. In current medicine, it gained authority in 1937 after described by Hulusi Behçet (1,2). BD is characterized by its ability to impact small, medium, and large diameter arteries in both arterial and venous systems, differentiating it from other vasculitis.

Türkiye has the highest incidence (80–370 cases per 100,000), followed by Japan, Korea, China, Iran, Iraq, and Saudi Arabia (3). The condition is more frequent among migrants from high-risk locations in low-prevalence nations like Europe and America. It mostly affects adults aged 20 to 40, particularly males (4). The main clinical manifestation is painful, recurrent mucocutaneous ulcers. Ocular involvement (two-thirds of patients), vascular complications (one-third), and central nervous system involvement (10–20%) result in the greatest morbidity and mortality. Cutaneous and articular symptoms are prevalent in BD, although renal and peripheral nervous system involvement is rare (5).

Although disease activity decreases in many cases among women with BD during pregnancy, an increase in the risk of pregnancy complications has been reported (6). In different studies, it has been found that complications such as miscarriage, preterm birth, cesarean section, intrauterine fetal death, HELLP syndrome, and immune thrombocytopenia are more frequently observed in patients with BD compared to healthy pregnancies (6,7). Additionally, in pregnant women with active disease who are using colchicine, adverse obstetric outcomes such as preterm birth and low birth weight are more frequently observed. These findings indicate that pregnant women with BD should be closely monitored throughout their pregnancy (8).

This study aimed to evaluate and compare pregnancy outcomes before and after the diagnosis of Behçet's disease and to explore the impact of disease activity and treatment regimens during pregnancy and the postpartum period.

MATERIAL AND METHODS

Study Population

This cross-sectional and retrospective analysis included 30 patients diagnosed with BD and examined 100 pregnancy outcomes from January 2025 to June 2025, selected from patients in the outpatient clinic throughout this period. This research thoroughly assessed the outcomes of 100 pregnancies in individuals diagnosed with BD, studying the pregnancy results in detail both before as well as after the diagnosis. Detailed information about the pregnancies of each patient diagnosed with BD, were acquired cross-sectionally via both hospital records and individual conversations with the patients. A certain diagnosis of BD was determined according to the International Study Group (ISG) criteria (1990), resulting in recurrent oral aphthous ulcers alongside at least two of the following minor criteria: recurrent genital ulcers, skin lesions, ocular involvement, or a positive pathergy test (9). The exclusion criteria were limited clinical data, a conflicting diagnosis of BD or absence of standard diagnostic criteria, and the presence of concurrent rheumatologic conditions. The research received approval from the ethical committee of Ümraniye Training and Research Hospital (Date and number: 16.01.2025/474) and was conducted in accordance with the Declaration of Helsinki. Data collection and reporting adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) criteria.

Maternal - neonatal Parameters and Obstetric Outcomes

The demographic and clinical features of all patients were examined, including age, education, body mass index (BMI), age at symptom onset, and age at diagnosis. Clinical symptoms of BD including oral aphthae, vaginal ulcers, erythema nodosum, papulopustular eruptions, and involvement of the ophthalmic, musculoskeletal, vascular, central nervous system (CNS), and gastrointestinal system (GIS), were reported. Furthermore, treatments including low dose aspirin and colchicine, the analysis included obstetric parameters such as gestational age at delivery, mode of delivery, neonatal birth weight, NICU admission, neonatal jaundice, presence of fetal anomalies, and perinatal mortality (including miscarriage, elective termination, and stillbirth). Additionally, maternal outcomes such as preterm birth, hypertensive disorders of pregnancy (including preeclampsia and gestational hypertension), gestational diabetes mellitus, fetal growth restriction, and live birth rates were assessed. Adverse outcomes were characterized as miscarriage, stillbirth, fetal abnormality, and HELLP syndrome. The assessment of disease activity during pregnancy and the postpartum period was carried out. Additionally, comorbid conditions and results of the pathergy test were recorded. We assessed disease activity during pregnancy. Patients presenting no disease activity and symptoms linked to BD were considered to be in remission. A flare-up was considered to be present if symptoms escalated or emerged during gestation. The administration of any medicine for the treatment of BD during pregnancy was also documented. Pregnancy outcomes before and after the diagnosis of BD were compared, and factors associated with live births without adverse outcomes in pregnancies occurring after the diagnosis were evaluated.

Preterm delivery was characterized as a birth occurring before to 37 weeks of gestation. Gestational hypertension is characterized by new-onset systolic blood pressure of ≥140 mmHg and/or diastolic blood pressure of ≥90 mmHg occurring after 20 weeks of gestation, without the presence of proteinuria or clues of end-organ failure. Preeclampsia is characterized by gestational hypertension with proteinuria (≥300 mg/24 h or a protein/creatinine ratio ≥0.3) or, in the absence of proteinuria, by manifestations of maternal organ malfunction, as per ACOG criteria (9).

Statistical Analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS v22.00). Armonk, IBM Corp). Descriptive data were expressed as mean, median, standard deviation, and minimum-maximum. The normality of the distribution of the variables was evaluated using the Kolmogorov–Smirnov test. Chi-square tests (Fisher's exact test if expected counts were below five) were used for categorical data. The Mann–Whitney U test was used to compare the two groups. In statistical analyses, a significance level of $p<0.05$ was considered.

RESULTS

A total of 100 pregnancy outcomes from 30 patients diagnosed with BD were included in the study. The mean age of the patients was 45.5 years (SD: 9.6), and the mean age at diagnosis was 30.8 years (SD: 8.8). All patients were married and 25 (83.3%) were housewives, 2 (6.7%) were workers, and 3 (10%) were retired. While 24 patients were non-smokers, 4 were current smokers, and 2 were former smokers. None of the patients smoked during pregnancy. Demographic and clinical characteristics of patients with BD are presented in Table 1.

Comorbidities were present in 40% of the patients, including hypertension (n = 4), diabetes mellitus (n = 3), arrhythmia (n = 2), coronary artery disease (n = 2), and chronic obstructive pulmonary disease (n = 1).

The most common clinical manifestation was oral ulcers, observed in all patients (100%), followed by genital ulcers in 25 (83.3%), musculoskeletal involvement in 13 (43.3%), erythema nodosum in 9 (30%), papulopustular lesions in 7 (23.3%), and ocular involvement in 5 (16.7%). Pathergy positivity was present in 16 (53.3%) patients. Vascular involvement was observed in 3 patients (10%), while central nervous system and gastrointestinal involvement were not reported.

None of the patients had infertility, and all pregnancies were spontaneous. The mean number of gravidas was 5 (SD: 2.7; range: 1–9), the mean parity was 2.7 (SD: 0.9; range: 1–5), and the mean number of abortions was 2.2 (SD: 2.2; range: 0–6).

Table 1. Demographic and Clinical Characteristics of Patients with Behçet's Disease

Age, years	45.5 (9.6)
Educational level	
Illiterate	3 (10%)
Primary school	13 (43.3%)
Middle school	6 (20%)
High school	5 (16.7%)
University	3 (10%)
Body mass index, kg/m²	26.9 (4.3)
Age at symptom onset, years	24.5 (8.2) (10-45)
Age at diagnosis, years	30.8 (8.8) (21-56)
Clinical manifestations	
Oral aphthae	30 (100%)
Genital ulcers	25 (83.3%)
Erythema nodosum	9 (30%)
Papulopustular lesion	7 (23.3%)
Ocular involvement	5 (16.7%)
Musculoskeletal involvement	13 (43.3%)
Pathergy positivity	16 (53.3%)
Vascular involvement	3 (10%)
CNS involvement	-
GIS involvement	-
Comorbidity, yes	12 (40%)

Data are presented as mean (SD) or n (%) or (min-max)
CNS Central Nervous System, GIS Gastrointestinal System

Comparison of Pregnancy Outcomes Before and After the Diagnosis of Behçet's Disease

Of the pregnancies, 52 (52%) occurred before the diagnosis of BD, while 48 (48%) occurred after the diagnosis. Gestational age at birth was markedly lower in the post-diagnosis group ($p<0.001$), and the rate of preterm birth was higher in this group ($p = 0.03$). Cesarean delivery was more frequent in the post-diagnosis group ($p = 0.002$). The use of anticoagulant treatment was also significantly higher in the post-diagnosis group ($p = 0.02$). Other variables, including birth weight, miscarriage, NICU admission, neonatal jaundice, anomaly, and mortality, did not differ significantly between the groups ($p>0.05$) (Table 2).

Preterm birth was observed in a total of 12 (12%) pregnancies. The underlying causes included COVID-19 infection in 2 patients, HELLP syndrome in 1 patient, preeclampsia in 1 patient, oligohydramnios in 1 patient, polyhydramnios in 1 patient, pulmonary thromboembolism during pregnancy in 1 patient, and spontaneous preterm labor in 4 patients.

Final pregnancy outcomes were assessed in relation to BD diagnosis. The rate of live births was 78.8% before diagnosis and 70.8% after diagnosis ($p = 0.64$). Miscarriage occurred in 19.2%

Table 2. Maternal and Fetal Outcomes Before and After Behçet's Disease Diagnosis

	Pregnancies before diagnosis n=52	Pregnancies after diagnosis n=48	p
Mothers age at birth, years	23.7 (5.5)	30.1 (5.2)	<0.001
Gestational age at birth, weeks	39.1 (1.74)	37.4 (2.57)	<0.001
Birth weight, gram	3183.4 (542.2)	3245.4 (585.4)	0.631
Mode of delivery			
Vaginal delivery	33 (80.5%)	16 (45.7%)	0.002
Cesarean delivery	8 (19.5%)	19 (54.3%)	
Preterm birth	3 (7.3%)	9 (25.7%)	0.03
Premature rupture of membranes	-	3 (8.6%)	0.09
Fetal growth restriction	3 (7.3%)	1 (2.9%)	0.62
Miscarriage	10 (19.2%)	12 (25%)	0.64
GA at miscarriage	8.2 (1.6)	8.1 (1.6)	1
Gestational Diabetes Mellitus	-	1 (2.9%)	0.46
Gestational Hypertension	-	3 (8.6%)	0.09
Preeclampsia	2 (4.9%)	3 (8.6%)	0.65
Treatments			
Low-dose aspirin	1 (2.4%)	5 (14.3%)	0.08
Anticoagulant	1 (2.4%)	7 (19.4%)	0.02
NICU	4 (9.8%)	2 (5.9%)	0.68
Neonatal jaundice	10 (24.4%)	8 (23.5%)	0.57
Anomaly	1 (2.4%)	-	0.54
Mortality	11 (21.2%)	14 (29.1%)	0.26

Data are presented as mean (SD) or n (%)

of pregnancies before diagnosis and in 25% after. The mean gestational week at miscarriage was 8.2 (SD: 1.6; range: 6–12) in pregnancies before the diagnosis of BD and 8.1 (SD: 1.6; range: 5–10) in those occurring after the diagnosis. Termination rates were similar in both groups (1.9% vs. 2.1%), and stillbirth was reported only one patient in the post-diagnosis group (2.1%). No statistically significant differences were observed between the groups (Table 3).

A stillbirth was observed in one patient, a 38-year-old woman in her fourth pregnancy, which occurred after the diagnosis of BD. The stillbirth occurred at 28 weeks of gestation due to preeclampsia, with a fetal weight of 1600 grams. The patient had been receiving colchicine treatment prior to pregnancy but discontinued it during gestation.

Of the two pregnancy terminations, one was performed before and the other after the diagnosis of BD. Both were elective procedures initiated at the patient's request.

Among the 12 patients who had miscarriages after the diagnosis of BD, 9 (75%) were using colchicine during pregnancy, while 3 (25%) were not. There was no significant difference in miscarriage rate between colchicine users and non-users (p = 0.74).

Factors Associated with Live Birth and Fetal Well-being in Pregnancies Affected by Behçet's Disease

Among pregnancies after BD diagnosis (n=48), erythema nodosum (p = 0.02) and ocular involvement (p=0.04) were significantly more common in those without a healthy live birth. Other variables, including age at symptom onset, age at diagnosis, maternal age at delivery, genital ulcers, papulopustular lesions, musculoskeletal involvement, pathergy positivity, vascular involvement, colchicine use during pregnancy, and preconception disease activity, were not significantly different between the groups (p>0.05 for all) (Table 4).

In the multivariate logistic regression analysis, variables that were significant in the univariate analysis, including the presence of erythema nodosum and ocular involvement, were included along

Table 3. Final Pregnancy Outcomes Before and After Behçet's Diagnosis

	Pregnancies before diagnosis	Pregnancies after diagnosis	p
Live birth	41 (78.8%)	34 (70.8%)	0.64
Miscarriage	10 (19.2%)	12 (25%)	
Termination	1 (1.9%)	1 (2.1%)	
Stillbirth	-	1 (2.1%)	

Data are presented as n (%)

Table 4. Factors Associated with Live Births Without Adverse Outcomes in Pregnancies Following the Diagnosis of Behçet's Disease (n=48)

	Live birth without adverse outcomes		p
	Yes (n=34)	No (n=14)	
Age at symptom onset, years	22.9 (4.6)	22.2 (4.2)	0.332
Age at diagnosis, years	26.1 (5.1)	24.2 (5.9)	0.06
Mother's age at birth	29.8 (5.1)	30.5 (5.5)	0.724
Symptoms in patients			
Oral aphthae	34 (100%)	14 (100%)	1
Genital ulcers	29 (85.3%)	10 (71.4%)	0.41
Erythema nodosum	14 (41.2%)	11 (78.6%)	**0.02**
Papulopustular lesion	8 (23.5%)	6 (42.9%)	0.29
Ocular involvement	5 (14.7%)	6 (42.9%)	**0.04**
Musculoskeletal involvement	16 (47.1%)	10 (71.4%)	0.21
Pathergy positivity	15 (44.1%)	6 (42.9%)	0.59
Vascular involvement	4 (11.8%)	-	0.31
Colchicine during pregnancy	21 (61.8%)	9 (64.3%)	0.56
Low-dose aspirin during pregnancy	5 (14.7%)	-	0.85
Anticoagulant during pregnancy	6 (17.6%)	1 (50%)	0.35
Active disease activity before pregnancy	10 (29.4%)	2 (40%)	0.63
Active disease activity during pregnancy	18 (52.9%)	1 (20%)	0.34

Data are presented as mean (SD) or n (%)

Table 5. A Multivariate Logistic Regression Analysis of Adverse Pregnancy Outcomes in Behçet's Disease

	B	S.E.	Exp (B)	95% CI		p
				Lower	Upper	
Maternal age	-0.047	0.76	0.954	0.822	1.107	0.533
Erythema nodosum	1.734	0.850	5.66	1.071	29.92	**0.041**
Ocular involvement	1.338	0.834	3.81	0.743	19.551	0.109
Colchicine during pregnancy	-1.01	0.863	0.362	0.067	1.967	0.239

with maternal age and colchicine use, considering their potential impact on pregnancy outcomes. The presence of erythema nodosum was identified as an independent risk factor for adverse pregnancy outcomes, with an odds ratio of 5.66 (95% CI: 1.07–29.92, p=0.041). Other variables, including maternal age, colchicine use during pregnancy, and ocular involvement, were not statistically significant (Table 5).

Disease Characteristics and Management of Behçet's Disease in Pregnancy

Of the 48 pregnancies that occurred after the diagnosis of BD, colchicine was used in 30 (62.5%) pregnancies, azathioprine was used in 2 (4.2%), and sulfasalazine was used in 1 (2.1%) during the gestational period. As a result of 30 pregnancies using colchicine, 21 resulted in live births, 8 in abortions, and 1 was terminated at the patient's request.

Among the pregnancies that occurred after the diagnosis of BD, the disease was active in 12 pregnancies (25%) and in remission in 27 (56.3%) at the time of conception. Disease activation occurred in 19 (39.5%) pregnancies, while the disease remained stable or in remission in the other pregnancies. Of the 19 pregnancies with flare-ups, 11 had active disease prior to conception. Flare-ups occurred in the first trimester in 12 pregnancies, in the second trimester in 12, and in the third trimester in 7.

The most common manifestations during flares included oral aphthae alone in 5 pregnancies, oral aphthae and genital ulcers in 5, oral aphthae, genital ulcers, and erythema nodosum in 1, oral aphthae and erythema nodosum in 2, genital ulcers alone in 2, uveitis in 1, arthritis in 2, and arthritis with thrombosis in 1 pregnancy.

In three patients, BD was first diagnosed during pregnancy following presentations of pulmonary thromboembolism, deep vein thrombosis, and genital ulcers, respectively.

Treatment was escalated due to disease activation in 10 (20.8%) pregnancies, reduced in 10 (20.8%) pregnancies, and remained unchanged in 28 (58.3%) pregnancies. Following delivery, an increase in disease activity was observed in 14 pregnancies (29.2%), while the disease remained stable in the others.

DISCUSSION

This study evaluated pregnancy related obstetric outcomes and disease related factors in patients with BD, both before and after the diagnosis. Our findings indicate that pregnancies occurring after the diagnosis of BD have higher rates of preterm birth and cesarean delivery. The presence of erythema nodosum was an independent predictor of adverse pregnancy outcomes.

In this study, 12% of all pregnancies resulted in preterm birth, and among pregnancies following the diagnosis of BD this rate was significantly higher compared to those that occurred before the diagnosis (25.7% vs. 7.3%). This highlights the impact of disease activity or treatment timing on obstetric outcomes. In a population-based study using California birth registry data, Horomanski et al. similarly reported that 25% of pregnancies in women with systemic vasculitis, including those with BD, resulted in preterm birth. Importantly, the adjusted relative risk for preterm birth in patients with vasculitis was found to be 3.21 (95% CI: 2.15–4.79), indicating more than a threefold increased risk compared to the general population (10). In the same study by Horomanski et al., hypertensive disorders in pregnancy were also found to be significantly increased among women with vasculitis (10). In our study, hypertensive complications did not differ significantly before and after BD diagnosis. Preeclampsia was observed in 4.9% of pregnancies before diagnosis and 8.6% of pregnancies after diagnosis, while gestational hypertension was only observed in the post-diagnosis group (8.6%). Despite this numerical increase, the differences were not found to be statistically significant. The slightly higher rates in the post-diagnosis group can be attributed to the older maternal age observed in these pregnancies, rather than the direct effect of BD (10).

In a large population-based registry study, Chan et al. reported an increased risk of gestational diabetes in women with BD (adjusted OR: 1.89, 95% CI: 1.10–3.25), whereas fetal outcomes were not adversely affected (11). Similarly, in our cohort, we did not observe a statistically significant difference in neonatal complications, congenital anomalies, or NICU admissions between pregnancies occurring before and after the diagnosis of diabetes. Specifically, although gestational diabetes was more frequently observed after diagnosis in our series, the difference did not reach a statistically significant level, likely due to the smaller sample size.

In our study, the cesarean section rate in pregnancies occurring after the diagnosis of BD was significantly higher compared to pregnancies before the diagnosis (54.3% vs. 19.5%, $p = 0.002$). This finding is consistent with previous reports suggesting that patients with BD may have an increased risk of cesarean delivery. As suggested in the literature, a possible explanation is that doctors may prefer cesarean delivery in patients with a history of genital ulcers due to concerns about triggering an inflammatory response in the genital area. Vaginal birth, especially if associated with trauma, could theoretically worsen local disease activity (12,13).

In our study, apart from early birth and delivery method, no significant relationship was found between BD and other adverse obstetric outcomes such as miscarriage, fetal growth restriction, admission to the NICU, or perinatal mortality. When examining factors associated with live birth without adverse outcomes, univariate analysis revealed that conditions such as erythema nodosum and ocular involvement were significantly associated with poor outcomes. However, in the multivariable logistic regression, only erythema nodosum remained an independent determinant. Disease activity before and during pregnancy showed no statistically significant association with obstetric outcomes. Previous studies have identified ocular involvement and a history of thrombotic events in BD as risk factors for adverse pregnancy outcomes. In some cohorts, the increased risk of miscarriage has been attributed to placental thrombotic events, suggesting a possible role of subclinical vasculitis or a procoagulant tendency in the pathogenesis of pregnancy loss (12,13).

In our study, disease flare-ups were observed in approximately 40% of pregnancies that occurred after the diagnosis of BD, with the most common symptoms being oral aphthae and genital ulcers. In the literature, there are varying results regarding the effect of pregnancy on the activity of BD. In a combined analysis of 21 case reports involving 25 patients and 31 pregnancies, disease flares were reported in 51.6%, remission in 45%, and unchanged cases in 3.2%, indicating that pregnancy may have variable effects on disease activity. Similarly, a review summarizing data from an 11-case series involving 339 patients showed that 52% experienced disease improvement during pregnancy, while 27% experienced flare-ups (12). These findings support the notion that pregnancy can have variable effects on BD, ranging from improvement to worsening or no change. In our cohort, disease exacerbations were observed across all trimesters, with the highest frequency in the first and second trimesters, followed by the third trimester. Regarding the timing of exacerbations, findings in the literature remain inconsistent. In the study by Hamza et al., most flares occurred during the third trimester, whereas Bang et al. reported most exacerbations during the first trimester (14,15).

In line with our results, the most common symptoms during pregnancy flares were oral ulcers and genital ulcers, and previous studies have also reported oral ulcers, genital ulcers, and erythema nodosum as predominant features during pregnancy. In our cohort,

thrombotic complications were observed in only one patient, and ocular flare-ups were not reported. Similarly, in the literature, more severe manifestations such as ocular involvement, Budd–Chiari syndrome, or cerebral venous sinus thrombosis have been rarely described during pregnancy (16,17). These observations indicate that the worsening of the disease during pregnancy is not common, but is generally limited to mucocutaneous activity and rarely affects major organ systems.

In BD, colchicine is one of the first-line treatments, especially for mucocutaneous involvement, and is considered safe during both pregnancy and breastfeeding. In patients with refractory mucocutaneous findings or vascular or ocular involvement, azathioprine is commonly used and is considered safe during pregnancy and breastfeeding, like colchicine (18, 19). In our cohort, 62.5% of the patients were treated with colchicine, 4.2% with azathioprine, and one patient was treated with sulfasalazine due to resistant joint involvement. Eight of the 30 pregnancies exposed to colchicine ended in miscarriage; however, no fetal anomalies were observed in any of the cases exposed to colchicine. Furthermore, in our study, colchicine use was not significantly associated with miscarriage or with adverse outcomes, supporting its continued use during gestation in appropriate clinical settings.

Although our findings are broadly consistent with previous studies, some differences were observed that may be explained by variations in study design, patient selection, and treatment approaches across cohorts. Unlike multicenter prospective studies with larger and more diverse populations, our study was conducted in a single tertiary center with a relatively limited sample size, which may have influenced the generalizability of the results. In addition, the retrospective design and the relatively homogeneous treatment regimens within our cohort might have contributed to discrepancies with earlier reports. These factors, together with the inherent challenges of assessing disease activity and treatment impact during pregnancy, should be considered when interpreting our results.

In conclusion, we showed that pregnancies occurring after the diagnosis of BD were associated with an increased risk of preterm birth and cesarean delivery; however, other obstetric complications such as miscarriage, fetal growth restriction, and neonatal morbidity did not significantly increase. Especially, erythema nodosum was an independent predictor of adverse pregnancy outcomes. Colchicine, widely used in BD, appeared to be safe during pregnancy and was not associated with adverse fetal outcomes. These results underscore the importance of individualized risk assessment and close obstetric and rheumatologic monitoring for pregnant women with BD.

Ethical approval: Ethical approval was obtained from the ethical committee of Ümraniye Training and Research Hospital (Date and number: 16.01.2025/474) Consent for study participation was obtained from all patients or their guardians.

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