International Journal of Medicine
pISSN 1468-3814 | eISSN 2667-7008
https://theinternationalmedicine.com/

Original Researcher Article *DOI: 10.61336/im/26-6-147*

Prevalence and Risk Factors of Cervical Intraepithelial Neoplasia in Pregnant Women Attending a Tertiary Care Hospital: A Clinico-Cytological Study.

[1]Dr Meghna Das, [2]Dr Pranita Thakuria.
[1]Associate Professor, Department of O&G, Gauhati Medical College & Hospital GMCH, Gauhati, INDIA
[2]Assistant Professor, Nalbari Medical College & Hospital ,NMCH, INDIA.

Correspondence:
Dr Meghna Das.
Associate Professor, Department of O&G, Gauhati Medical College & Hospital GMCH, Gauhati, INDIA.

Email:drmeghnadas76@gmail.com

Received: **05-05-2026**
Revised: **20-05-2026**
Accepted: **08-06-2026**
Published: **24-06-2026**

Abstract

Background: Cervical cancer remains a major public health concern in developing countries and is preceded by a recognizable premalignant stage known as cervical intraepithelial neoplasia (CIN). Pregnancy provides a valuable opportunity for cervical cancer screening, as many women access healthcare services during antenatal visits. Early detection of CIN can prevent progression to invasive cervical cancer and reduce disease-related morbidity and mortality. ***Objectives:*** To determine the prevalence of cervical intraepithelial neoplasia among pregnant women attending a tertiary care hospital and to identify socio-demographic, reproductive, and behavioral risk factors associated with CIN using clinico-cytological assessment. ***Materials and Methods:*** This hospital-based cross-sectional clinico-cytological study included 300 pregnant women attending the antenatal clinic of a tertiary care hospital. Detailed demographic, obstetric, and risk factor profiles were recorded using a structured proforma. Cervical cytology samples were collected using an endocervical brush and examined according to the Bethesda System. Data were analyzed using appropriate statistical tests, and p-values <0.05 were considered statistically significant. ***Results:*** The mean age of participants was 25.8 ± 4.3 years, and the mean gestational age was 24.6 ± 8.2 weeks. Most women were from rural areas (59.3%), were multigravida (60.7%), and were literate (78.7%). Cervical intraepithelial neoplasia was detected in 18 women, yielding an overall prevalence of 6.0% (95% CI: 3.9–9.2%). CIN I (LSIL) was the most common lesion (4.3%), followed by CIN II (1.3%) and CIN III (0.3%). According to the Bethesda System, 86.0% of smears were negative for intraepithelial lesion or malignancy, while 14.0% showed abnormal cytology. Significant risk factors associated with CIN included multiparity (OR=5.39, p=0.001), low socioeconomic status (OR=4.97, p=0.001), early age at marriage (OR=5.79, p=0.001), history of sexually transmitted infections (OR=5.56, p<0.001), tobacco use (OR=4.79, p=0.003), prolonged oral contraceptive use, and multiple sexual partners. ***Conclusion:*** The prevalence of CIN among pregnant women was 6.0%, with low-grade lesions constituting the majority of cases. Routine antenatal Pap smear screening is a safe and effective approach for early detection of cervical premalignant lesions. Screening efforts should particularly focus on women with established risk factors to facilitate timely intervention and reduce the future burden of cervical cancer.

Keywords: Cervical intraepithelial neoplasia. Pregnancy. Pap smear screening.

INTRODUCTION

Cervical cancer remains one of the most common malignancies affecting women worldwide and continues to be a major public health problem in developing countries. It develops through a well-recognized premalignant stage known as cervical intraepithelial neoplasia (CIN), which represents a spectrum of dysplastic changes in the cervical epithelium. Persistent infection with high-risk human papillomavirus (HPV), particularly HPV-16 and HPV-18, has been established as the primary etiological factor in the development of CIN and cervical carcinoma. Early identification and treatment of CIN can effectively prevent progression to invasive cervical cancer, thereby reducing disease-related morbidity and mortality. [1,2]

Pregnancy provides a unique opportunity for cervical cancer screening because many women who otherwise do not undergo routine gynecological examination come into contact with healthcare services during antenatal visits. Physiological changes in the cervix during pregnancy, including increased vascularity, eversion of the transformation zone, and hormonal influences, may facilitate the detection of cervical abnormalities. The prevalence of CIN during pregnancy has been

reported to range from 0.2% to 3%, while abnormal cervical cytology may be detected in up to 5–8% of pregnant women. Although most lesions remain stable or regress postpartum, a proportion may persist or progress, necessitating appropriate surveillance and management. [3]

Several socio-demographic, behavioral, and reproductive factors have been associated with the development of CIN. These include early age at first sexual intercourse, early marriage, multiparity, multiple sexual partners, low socioeconomic status, smoking, prolonged oral contraceptive use, sexually transmitted infections, and immunosuppression. Many of these risk factors are prevalent in developing countries and contribute significantly to the burden of cervical neoplasia. Identification of such risk factors among pregnant women may help in implementing targeted preventive strategies and strengthening screening programs. [4]

The Papanicolaou (Pap) smear remains the cornerstone of cervical cancer screening and is considered safe, inexpensive, and effective during pregnancy. Cytological evaluation based on the Bethesda System allows standardized reporting of epithelial abnormalities and facilitates appropriate clinical management. Screening during pregnancy not only aids in the early detection of CIN but also provides an opportunity for counseling regarding HPV infection, cervical cancer prevention, and follow-up care after delivery. [5]

AIM

To determine the prevalence of cervical intraepithelial neoplasia and evaluate its associated risk factors among pregnant women attending a tertiary care hospital using clinico-cytological assessment.

OBJECTIVES

1. To estimate the prevalence of cervical intraepithelial neoplasia among pregnant women attending antenatal clinics.
2. To identify socio-demographic, reproductive, and behavioral risk factors associated with cervical intraepithelial neoplasia.
3. To evaluate cervical cytological abnormalities using Pap smear examination and classify them according to the Bethesda System.

MATERIAL AND METHODOLOGY

Source of Data

The data were collected from pregnant women attending the Antenatal Outpatient Department (ANC OPD) of the Department of Obstetrics and Gynecology at the tertiary care teaching hospital. Relevant clinical, demographic, obstetric, and cytological information was obtained through direct interviews, clinical examination, and laboratory investigations.

Study Design

The study was a hospital-based cross-sectional clinico-cytological study.

Study Location

The study was conducted in the Department of Obstetrics and Gynecology of a tertiary care teaching hospital.

Study Duration

The study was conducted over a period of 12 months from January 2025 TO December 2025.

Sample Size

A total of 300 pregnant women attending the antenatal clinic during the study period were included in the study.

Inclusion Criteria

- Pregnant women attending the antenatal clinic irrespective of gestational age.
- Women willing to participate and provide written informed consent.
- Women aged 18 years and above.
- Women with a visible cervix on speculum examination.

Exclusion Criteria

- Women with diagnosed carcinoma cervix undergoing treatment.
- Women with active vaginal bleeding precluding Pap smear collection.
- Women with a history of hysterectomy.
- Women unwilling to participate in the study.
- Women with severe obstetric complications requiring immediate intervention.

Procedure and Methodology

After obtaining approval from the Institutional Ethics Committee, eligible pregnant women were recruited consecutively from the antenatal clinic. Written informed consent was obtained from all participants.

A detailed history was recorded including age, educational status, occupation, socioeconomic status, parity, age at marriage, age at first sexual intercourse, contraceptive use, smoking history, history of sexually transmitted infections, and previous cervical screening history.

General physical examination, systemic examination, and obstetric examination were performed. A per-speculum examination was conducted to assess the cervix for erosion, hypertrophy, bleeding on touch, ulcerative lesions, discharge, and other abnormalities.

Cervical cytology samples were collected using an Ayre's spatula and endocervical brush under aseptic precautions. The transformation zone was adequately sampled. The collected material was evenly spread on clean glass slides and immediately fixed in 95% ethanol to prevent air-drying artifacts.

Women with abnormal cytological findings were counseled regarding further evaluation and postpartum follow-up as per institutional protocol.

Sample Processing

The prepared smears were transported to the Department of Pathology for cytological examination.

The slides were stained using the standard Papanicolaou staining technique. Cytological evaluation was performed by experienced cytopathologists. Reporting of Pap smear findings was carried out according to the Bethesda System and categorized as:

- Negative for intraepithelial lesion or malignancy (NILM)
- Atypical squamous cells of undetermined significance (ASC-US)
- Low-grade squamous intraepithelial lesion (LSIL)
- High-grade squamous intraepithelial lesion (HSIL)
- Squamous cell carcinoma
- Other glandular abnormalities, if present

Quality assurance measures were maintained throughout the processing and reporting procedures.

Statistical Methods

Data were entered into Microsoft Excel and analyzed using SPSS version ___.

- Categorical variables were expressed as frequencies and percentages.
- Continuous variables were expressed as mean ± standard deviation (SD).
- Association between CIN and categorical risk factors was assessed using Chi-square test or Fisher's exact test.
- Independent sample t-test was used for comparison of continuous variables where appropriate.
- Odds ratios (OR) with 95% confidence intervals (CI) were calculated to identify risk factors associated with CIN.
- A p-value <0.05 was considered statistically significant.

Data Collection

Data were collected using a predesigned and pretested case record form. Information recorded included:

- Demographic profile (age, education, occupation, socioeconomic status)
- Obstetric history (gravidity, parity, gestational age)
- Reproductive and sexual history
- Contraceptive history
- History of sexually transmitted infections
- Clinical examination findings
- Pap smear cytology findings
- Final Bethesda classification

All collected information was maintained confidentially and used solely for research purposes.

OBSERVATION AND RESULTS

Table 1. Baseline Socio-Demographic and Obstetric Characteristics of Study Participants (N=300)

Variable	Value n (%) / Mean ± SD	Test Statistic	95% CI	p-value
Age (years)	25.8 ± 4.3	t=103.91	25.3–26.3	<0.001*
Age <20 years	42 (14.0)	χ^2=96.88	10.4–18.4	<0.001*
Age 20–24 years	102 (34.0)		28.7–39.7	
Age 25–29 years	96 (32.0)		26.9–37.6	
Age ≥30 years	60 (20.0)		15.8–24.9	
Rural residence	178 (59.3)	χ^2=10.42	53.6–64.8	0.001*
Urban residence	122 (40.7)		35.2–46.4	
Primigravida	118 (39.3)	χ^2=13.65	33.9–45.0	<0.001*
Multigravida	182 (60.7)		55.0–66.1	
Gestational age (weeks)	24.6 ± 8.2	t=51.98	23.7–25.5	<0.001*
Literacy rate	236 (78.7)	χ^2=97.01	73.7–83.0	<0.001*
Illiteracy	64 (21.3)		17.0–26.3	

Table 1 depicts the baseline socio-demographic and obstetric characteristics of the study participants. The mean age of the pregnant women was 25.8 ± 4.3 years (95% CI: 25.3–26.3 years), which was statistically significant (t=103.91, p<0.001). The majority of participants belonged to the 20–24 years age group (34.0%), followed by 25–29 years (32.0%), while 20.0% were aged ≥30 years and 14.0% were below 20 years of age. This age distribution showed significant variation (χ^2=96.88, p<0.001). Most women were from rural areas (59.3%), whereas 40.7% resided in urban areas, indicating a significantly higher rural representation (χ^2=10.42, p=0.001). Regarding gravidity, multigravida women constituted 60.7% of the study population compared to 39.3% primigravida women, and this difference was statistically significant (χ^2=13.65, p<0.001). The mean gestational age at screening was 24.6 ± 8.2 weeks (95% CI: 23.7–25.5 weeks), which was also statistically significant (t=51.98, p<0.001). Literacy was observed among 78.7% of participants, while 21.3% were illiterate, demonstrating a significantly higher proportion of literate women in the study (χ^2=97.01, p<0.001).

Table 2. Prevalence of Cervical Intraepithelial Neoplasia Among Pregnant Women (N=300)

Cytological Status	n (%)	Test Statistic	95% CI	p-value
CIN Present	18 (6.0)	χ^2=220.32	3.9–9.2	<0.001*
CIN Absent	282 (94.0)		90.8–96.1	
CIN I (LSIL)	13 (4.3)	χ^2=170.25	2.5–7.2	<0.001*
CIN II (HSIL)	4 (1.3)		0.5–3.4	
CIN III (HSIL)	1 (0.3)		0.01–1.9	
Overall CIN prevalence	6.0%	Z=4.54	3.9–9.2	<0.001*

Table 2 shows the prevalence and grading of cervical intraepithelial neoplasia (CIN) among pregnant women. Out of 300 participants, CIN was detected in 18 women, giving an overall prevalence of 6.0% (95% CI: 3.9–9.2%), which was statistically significant (Z=4.54, p<0.001). The remaining 94.0% of women had no evidence of CIN. Among the identified cases, CIN I corresponding to low-grade squamous intraepithelial lesion (LSIL) was the most common lesion, accounting for 13 cases (4.3%). Higher-grade lesions were comparatively uncommon, with CIN II observed in 4 women (1.3%) and CIN III in only 1 woman (0.3%). The predominance of low-grade lesions over high-grade lesions was statistically significant (χ^2=170.25, p<0.001).

Table 3. Association of Socio-Demographic, Reproductive and Behavioral Risk Factors with CIN (N=300)

Risk Factor	CIN Present n=18 (%)	CIN Absent n=282 (%)	Test Statistic	p-value
Multiparity (≥3 deliveries)	13 (72.2)	92 (32.6)	χ^2=11.54	0.001*
Low socioeconomic status	12 (66.7)	81 (28.7)	χ^2=10.67	0.001*
Age at marriage <18 years	14 (77.8)	106 (37.6)	χ^2=11.12	0.001*
History of STI	7 (38.9)	29 (10.3)	χ^2=12.43	<0.001*
Tobacco use	5 (27.8)	21 (7.4)	Fisher's exact=8.91	0.003*
Oral contraceptive use >5 years	6 (33.3)	34 (12.1)	χ^2=6.47	0.011*
Multiple sexual partners	4 (22.2)	11 (3.9)	Fisher's exact=10.36	0.001*

Odds Ratios for Significant Risk Factors

Risk Factor	Odds Ratio (95% CI)	p-value
Multiparity	5.39 (1.89–15.39)	0.001*
Low socioeconomic status	4.97 (1.80–13.69)	0.001*
Early marriage (<18 years)	5.79 (1.86–18.05)	0.001*
History of STI	5.56 (1.95–15.83)	<0.001*
Tobacco use	4.79 (1.42–16.11)	0.003*

Table 3 demonstrates the association between various socio-demographic, reproductive, and behavioral risk factors and the occurrence of CIN. Multiparity was significantly associated with CIN, with 72.2% of women with CIN being multiparous compared to 32.6% among those without CIN (χ^2=11.54, p=0.001). Similarly, low socioeconomic status was present in 66.7% of women with CIN compared to 28.7% of women without CIN (χ^2=10.67, p=0.001). Early age at marriage (<18 years) was another important risk factor, observed in 77.8% of CIN cases versus 37.6% of non-CIN cases (χ^2=11.12, p=0.001). A history of sexually transmitted infection (STI) was significantly more common among women with CIN (38.9%) than those without CIN (10.3%) (χ^2=12.43, p<0.001). Tobacco use, prolonged oral contraceptive use (>5 years), and multiple sexual partners were also significantly associated with CIN (p<0.05). Odds ratio analysis further revealed that early marriage (OR=5.79), history of STI (OR=5.56), multiparity (OR=5.39), low socioeconomic status (OR=4.97), and tobacco use (OR=4.79) were strong predictors of CIN.

Table 4. Distribution of Cervical Cytological Abnormalities According to Bethesda System (N=300)

Bethesda Classification	n (%)	Test Statistic	95% CI	p-value
NILM (Negative for Intraepithelial Lesion or Malignancy)	258 (86.0)	χ^2=620.88	81.6–89.5	<0.001*
Inflammatory smear	20 (6.7)		4.4–10.0	
ASC-US	4 (1.3)		0.5–3.4	
LSIL (CIN I)	13 (4.3)		2.5–7.2	
HSIL (CIN II & III)	5 (1.7)		0.7–3.8	
Squamous cell carcinoma	0 (0.0)		0.0–1.2	
AGC	0 (0.0)		0.0–1.2	

Summary of Abnormal Cytology

Category	n (%)	Test Statistic	95% CI	p-value
Normal cytology	258 (86.0)	χ^2=173.28	81.6–89.5	<0.001*
Abnormal cytology	42 (14.0)		10.5–18.4	
Premalignant lesions (ASC-US+LSIL+HSIL)	22 (7.3)	χ^2=211.68	4.9–10.8	<0.001*

Statistically significant at p < 0.05.

Table 4 presents the distribution of cervical cytological abnormalities according to the Bethesda System. The majority of women (86.0%) had negative findings for intraepithelial lesion or malignancy (NILM), which was highly significant (χ^2=620.88, p<0.001). Inflammatory smears were observed in 6.7% of participants, representing the most common non-neoplastic abnormality. Among epithelial abnormalities, LSIL was the predominant lesion, identified in 4.3% of women, followed by HSIL in 1.7% and ASC-US in 1.3%. No cases of squamous cell carcinoma or atypical glandular cells (AGC) were detected. Overall, abnormal cytology was found in 14.0% of participants, while premalignant lesions (ASC-US, LSIL, and HSIL combined) accounted for 7.3% of all smears and were statistically significant (χ^2=211.68, p<0.001).

DISCUSSION

In the present study, the mean age of pregnant women was 25.8 ± 4.3 years, with the majority belonging to 20–24 years and 25–29 years age groups. This finding is comparable with Rasheed et al. (2021)[1], who observed that most antenatal women undergoing Pap smear screening were young reproductive-age women. Similarly, Lertcharernrit et al. (2016)[2] reported that pregnancy offers an important opportunity for cervical screening among women in the reproductive age group. The rural predominance in the present study was also in agreement with Thulaseedharan et al. (2012)[3], who reported that rural women have a higher burden of cervical cancer risk due to limited access to screening services and lower awareness. The prevalence of CIN in the present study was 6.0%, with CIN I/LSIL being the most common lesion (4.3%), followed by CIN II (1.3%) and CIN III (0.3%). Similar findings were reported by Lertcharernrit et al. (2016)[2], who found abnormal Pap smear prevalence of 6% among pregnant women. Rasheed et al. (2021)[1] reported abnormal cervical cytology in 13.7% of pregnant women, with LSIL as the most common abnormality. Neelima et al. (2017)[4] reported LSIL in 2% and HSIL in 0.2% of antenatal women, supporting the observation that low-grade lesions are more common than high-grade lesions during pregnancy.

In the present study, multiparity, low socioeconomic status, early marriage, history of STI, tobacco use, prolonged oral contraceptive use, and multiple sexual partners were significantly associated with CIN. Similar associations were observed by Varghese et al. (1999)[5], who reported early sexual exposure, multiple partners, and low socioeconomic status as important risk factors for cervical dysplasia. Thulaseedharan et al. (2012)[3] also emphasized the role of socioeconomic and reproductive factors in cervical cancer risk among rural Indian women. Bhalerao et al. (2017)[6] reported early age at intercourse, multiparity, illiteracy, STI, poor hygiene, low socioeconomic status, and tobacco use as common risk factors for cervical neoplastic lesions.

Odds ratio analysis in the present study showed that early marriage had the strongest association with CIN (OR=5.79), followed by history of STI (OR=5.56), multiparity (OR=5.39), low socioeconomic status (OR=4.97), and tobacco use (OR=4.79). These findings are consistent with studies by Schiffman et al. (2007)[7] and Bosch et al. (2002)[8], who described cervical neoplasia as a multifactorial disease strongly linked with persistent high-risk HPV infection and influenced by sexual, reproductive, and behavioral cofactors. Recent Indian data also support high parity, poverty, tobacco use, and inadequate screening as important contributors to the cervical cancer burden.

According to the Bethesda classification, 86.0% of women in the present study had NILM, while abnormal cytology was seen in 14.0%. Premalignant lesions including ASC-US, LSIL, and HSIL accounted for 7.3%. Similar distribution was reported by Rasheed et al. (2021)[1], where abnormal cytology was detected in 13.7% of pregnant women. Singh et al. (2025)[9] also reported that most Pap smears were negative for intraepithelial lesion or malignancy, while epithelial abnormalities were present in a smaller proportion. Agra-based data by Sharma et al. (2025)[10] reported abnormal Pap smears in 26.9%, with ASC-US, LSIL, and HSIL as major epithelial abnormalities.

Overall, the present study supports the role of antenatal Pap smear screening as an effective opportunity for early detection of CIN. Since most lesions detected were low-grade and no invasive carcinoma was found, routine screening during pregnancy may help in identifying premalignant lesions at an early and manageable stage. Similar views were expressed by Kim et al. (2024)[11], Suchońska et al. (2020)[12], Xavier-Júnior et al. (2014)[13], and Panagakis et al. (2023)[14], who emphasized that abnormal cervical cytology and CIN during pregnancy require careful evaluation and postpartum follow-up rather than immediate aggressive intervention in most cases.

CONCLUSION

The present study demonstrated that cervical intraepithelial neoplasia (CIN) was present in 6.0% of pregnant women attending a tertiary care hospital, with low-grade squamous intraepithelial lesion (LSIL/CIN I) being the most common abnormality. The majority of women had normal cytological findings; however, a significant proportion harbored premalignant cervical lesions that could be detected through routine antenatal screening. Multiparity, low socioeconomic status, early age at marriage, history of sexually transmitted infections, tobacco use, prolonged oral contraceptive use, and multiple sexual partners were identified as significant risk factors associated with CIN. The study highlights the usefulness, safety, and feasibility of Pap smear screening during pregnancy as an effective strategy for early detection of cervical premalignant lesions. Incorporating routine cervical cytology into antenatal care services may facilitate timely diagnosis, appropriate follow-up, and prevention of progression to invasive cervical cancer, particularly among high-risk women.

LIMITATIONS OF STUDY

- The study was conducted at a single tertiary care center, which may limit the generalizability of the findings to the wider population.
- The cross-sectional design precluded assessment of the natural progression or regression of CIN lesions during and after pregnancy.
- Histopathological confirmation was not available for all abnormal cytological findings, which may have affected diagnostic accuracy.
- HPV DNA testing was not performed; therefore, the role of specific high-risk HPV types could not be evaluated.
- Information regarding behavioral and reproductive risk factors was self-reported and may have been subject to recall bias or underreporting.
- The relatively small number of CIN-positive cases limited subgroup analyses of individual lesion grades.
- Postpartum follow-up of all women with abnormal cytology could not be ensured, preventing evaluation of lesion persistence or regression after delivery.
- Other potential confounding factors such as immunological status, nutritional factors, and partner-related risk factors were not assessed.

REFERENCES

1. Rasheed P, Al-Soweidi S, Al-Marzooq F, et al. Cervical cytological abnormalities among pregnant women attending antenatal clinics: a cross-sectional study. J Obstet Gynaecol Res. 2021;47(8):2854-2861.

2. Lertcharernrit J, Sananpanichkul P, Suknikhom W, et al. Prevalence of abnormal cervical cytology in pregnancy and associated factors. Asian Pac J Cancer Prev. 2016;17(11):4989-4993.
3. Thulaseedharan JV, Malila N, Hakama M, et al. Socio-demographic and reproductive risk factors for cervical neoplasia in India: a case-control study. Asian Pac J Cancer Prev. 2012;13(7):3645-3650.
4. Neelima V, Srujana A, Sravani G, et al. Cervical cytological abnormalities among antenatal women: an observational study. Int J Reprod Contracept Obstet Gynecol. 2017;6(10):4424-4428.
5. Varghese C, Amma NS, Chitrathara K, et al. Risk factors for cervical dysplasia in Kerala, India. Bull World Health Organ. 1999;77(3):281-283.
6. Bhalerao A, Kulkarni S, Ghike S, et al. Prevalence of abnormal cervical cytology and associated risk factors in women attending a tertiary care center. Int J Community Med Public Health. 2017;4(10):3781-3786.
7. Schiffman M, Castle PE, Jeronimo J, Rodriguez AC, Wacholder S. Human papillomavirus and cervical cancer. Lancet. 2007;370(9590):890-907.
8. Bosch FX, Lorincz A, Muñoz N, Meijer CJLM, Shah KV. The causal relation between human papillomavirus and cervical cancer. J Clin Pathol. 2002;55(4):244-265.
9. Singh R, Gupta S, Verma P, et al. Spectrum of cervical cytological abnormalities and associated risk factors among reproductive-age women: a hospital-based study. J Obstet Gynaecol India. 2025;75(2):145-152.
10. Sharma N, Agarwal M, Singh P, et al. Prevalence of epithelial cell abnormalities on Pap smear and associated risk factors in North Indian women. Indian J Pathol Microbiol. 2025;68(1):52-58.
11. Kim MK, Lee IH, Park SJ, et al. Management and outcomes of cervical intraepithelial neoplasia diagnosed during pregnancy. J Pathol Transl Med. 2024;58(2):112-119.
12. Suchońska B, Czajkowski K, Kamiński P, et al. Cervical intraepithelial neoplasia during pregnancy: diagnosis, management and outcomes. Ginekol Pol. 2020;91(6):345-350.
13. Xavier-Júnior JCC, Vale DBAP, Vieira LF, et al. Cervical cancer screening among pregnant women and prevalence of cytological abnormalities. Rev Bras Ginecol Obstet. 2014;36(7):321-326.
14. Panagakis G, Kottaridi C, Rodolakis A, et al. Cervical dysplasia and pregnancy: contemporary management and outcomes. Eur J Obstet Gynecol Reprod Biol. 2023;286:65-71.