6th ISIDOG CONGRESS

Of The International Society For Infectus Diseases In Obstetrics And Gynecology

INTERNATIONAL SOCIETY FOR
ISIDOG
INFECTIOUS DISEASES IN OBSTETRICS AND GYNECOLOGY

WELCOME TO BELGRADE

23-26.10.2025.
Sava Centar

www.isidog2025.com

Welcome Addresses

Prof. Dr. Ljubomir Petricevic
Congress president
ISIDOG vice president

Prof. Dr. Gilbert Donders
ISIDOG president

Dear colleagues and friends,

On behalf of **International Society for Infectious Diseases in Obstetrics and Gynaecology (ISIDOG),** it is our great pleasure and privilege to invite you to come and join us at the 06th ISIDOG Congress. The society and organizers are pleased to warmly welcome you for this unique experience in **Belgrade, Serbia, from 23rd to 26th October 2025.**

With the motto "We are a small group, but our work is big", our society unites top clinicians and researchers from all over world with common goal to protect and improve woman's health.

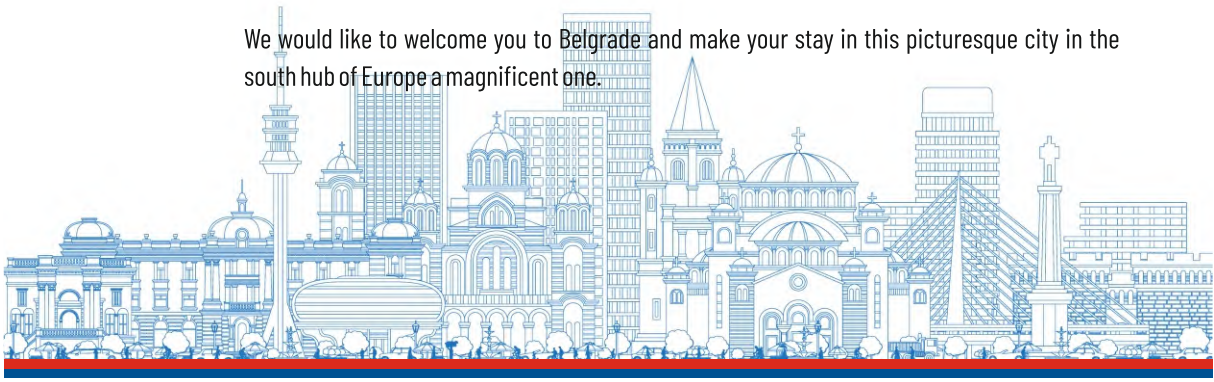
The conference is well thoughtful chosen meeting point for scientists, researchers, colleagues and all interested parties to interactively share knowledge, experience and friendship with main aim to take obtained valuable messages and implement those in everyone's daily practice. It is very known that our meetings are of high quality and offer interactive talks where shared information will be discussed, welcoming diverse opinions on all topics and at any time.

The scientific program, that intermingles local and international scientists, will include areas of diagnosis, prevention, and therapeutic options for the management of infections in obstetrics and gynecology. During the conference we will present a wide variety of topics, from biology, diagnostics and guidelines, to therapy, prevention and vaccination of all types of infections, inside or outside pregnancy, sexually transmitted or not, and would welcome all of you to present their contributions in these fields. Furthermore, during the meeting the society invests in opportunities for sponsors and exhibitors to ensure a productive interaction with all conference participants.

For the first time this meeting will be organized as a live event in the biggest conference venue of the Western Balkans, Sava Centar in Belgrade. The capital of Serbia is a very inviting and cultural city, where history and culture joins following the riverbanks of Danube and Sava. Belgrade is a vibrant and modern city and can be reached easily by plane, train or car.

We will give our best to ensure a wide range of social activities to be part of the program in order to make the Congress feel as an unforgettable trip with family and friends.

We would like to welcome you to Belgrade and make your stay in this picturesque city in the south hub of Europe a magnificent one.



Welcome to Belgrade

Serbia's capital is one of Europe's oldest cities. Built at the confluence of the Sava and Danube rivers, Belgrade is rightly known as "the Gate of the Balkans" and "the Doors to Central Europe".

Ruins of a Neolithic settlement have been unearthed nearby, while the first settlement on the site of the modern city was the Celtic town of Singidunum, which was built here in the 3rd Century BCE. The city changed hands with the arrival of Romans in the 1st Century, only to be conquered by Slavs in the 6th Century. Throughout history many nations have fought over it – Hungarians, Ottoman Turks, Austrians – resulting in the city being razed to the ground and rebuilt as many as 38 times throughout its history. In 1841, Belgrade became the capital city of Serbia.

"The sky above Belgrade is wide and high, unstable but always beautiful; even during winter serenities with their icy splendour; even during summer storms when the whole of it turns into a single gloomy cloud which, driven by the mad wind, carries the rain mixed with the dust of panonian plain; even in spring when it seems that it also blooms, along with the ground; even in autumn when it grows heavy with the autumn stars in swarms. Always beautiful and rich, as a compensation to this strange town for everything that isn't there, and a consolation because of everything that shouldn't be there.But the greatest splendour of that sky above Belgrade, that are the sunsets. In autumn and in summer, they are broad and bright like desert mirages, and in winter they are smothered by murky clouds and dark red hazes. And in every time of year frequently come the days when the flame of that sun setting in the plain, between the rivers beneath Belgrade, gets reflected way up in the high celestial dome, and it breaks there and pours down over the scattered town. Then, for a moment, the reddish tint of the sun paints even the remotest corners of Belgrade and reflects into the windows, even of those houses it otherwise poorly illuminates.»

Written about Belgrade by: Ivo Andrić, Serbian Nobel prize laureate

NOTE

- Outlets: the standard **voltage is 230 V** at a **frequency of 50 Hz**
- Tap water is **safe for drinking.**
- Average temperature in October: **maximum 18°C, minimum 9°C**
- National currency is **Serbian dinar** (1 RSD = 0,0085 EUR)
- Credit card payment **accepted**

Committees

Local organizing committee:

Prof. Dr. Ljubomir Petricevic, AT,
ISIDOG vice president and congress president

Prof. Dr. Aleksandar Stefanovic
President of Association of Gynecologists and Obstetricians of Serbia, Montenegro and the Republic of Srpska (UGOSCGRS);

Prof. Dr. Olivera Kontic Vucinic
President of the Gynecological and Obstetrical Section of the Serbian Medical Society

Prof. Dr. Zeljko Mikovic
President of the Section for perinatal and neonatal medicine of the Serbian Medical Society

Prof. Dr. Vesna Ecim Zlojutro
President of the Association of Gynecologists and Obstetricians of the Republic of Srpska (UGORS)

Ass. Dr. Sladjana Mihajlovic
Director of the Hospital for Gynecology and Obstetrics, Clinical Hospital Center "Dr. Dragisa Misovic - Dedinje"

International organizing committee and ISIDOG executive Board:

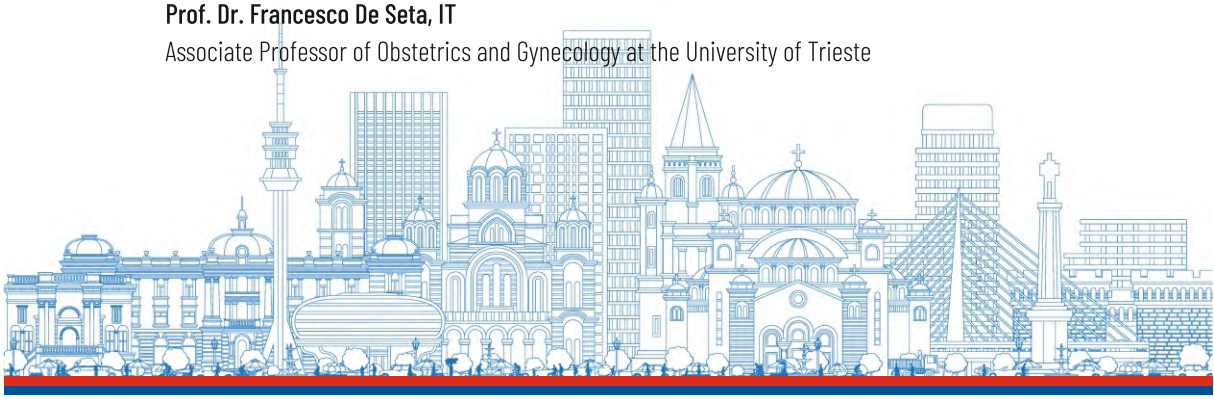
Prof. Dr. Gilbert Donders, BE
ISIDOG president

Prof. Dr. Ljubomir Petricevic, AT
ISIDOG vice president and congress president

Prof. Dr. Werner Mendling, DE
German Center for Infections in Gynecology and Obstetrics, Helios University Hospital Wuppertal

Prof. Dr. Daniel Surbek, CH
Head of Division of Obstetrics and Feto-Maternal Medicine, University Hospital Insel, Bern; University of Bern

Prof. Dr. Francesco De Seta, IT
Associate Professor of Obstetrics and Gynecology at the University of Trieste



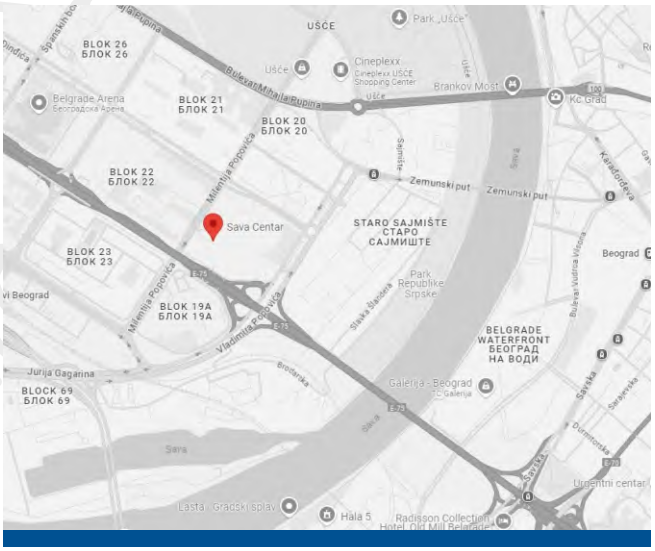
Venue

INTERNATIONAL CONGRESS, CULTURAL & BUSINESS CENTER
Milentija Popovića 9, Belgrade 11000, Serbia

Sava Center is a versatile congress center located in the heart of the business district of New Belgrade and is in close proximity to major hotels.

With its functional concept, it holds a unique position on the map of European congress centers, as it offers three different experiences in one place: congress, business, and culture.

With an area of 100,000 m2, Sava Center is one of Belgrade's most significant landmarks in the field of modern architecture. Conceived by architect Stojan Maksimović and opened in 1977, it was nominated for the prestigious Pritzker Architecture Prize, often referred to as the "Oscar of architecture".



6th ISIDOG CONGRESS
23-26.10.2025. Serbia, Belgrade, Sava Centar

Program

23.10.2025 **Day 1** National

07:30-17:30 **REGISTRATION**
Registration Counter, Sava Centar

08:50-09:00 **WELCOME WORDS:**
L. Petricevic, Congress president, ISIDOG vice president

09:00-10:20 **VULVO-VAGINAL INFECTIONS AND STI**
Chair: Vesna Ecim Zlojutro , Olivera Kontic Vucinic

SESSION A

09:00 - 09:15	Microbiology of Vulvovaginal Candidosis.	Valentina Arsic Arsenijevic
09:15 - 09:30	Genital infections at adolescent female.	Zoran Stankovic
09:30 - 09:45	Sex and health, forgotten diseases	Zoran Vilendecic
09:45 - 10:00	Preoperative antibiotic prophylaxis in gynaecology and obstetrics	Snezana Rakic
10:00 - 10:20	Discussion	

10:20-10:50 **Sponsored Lecture ***

10:50-11:10 **COFFEE BREAK**

11:10-12:10 **HPV AND INFECTIONS IN ONCOLOGY**
Chair: Aljosa Mandic, Aleksandar Stefanovic

SESSION B

11:10 – 11:25	HPV testing and Genotyping.	Maja Cupic
11:25 – 11:40	Oncological potential of HPV infection.	Borut Kobal
11:40 – 11:55	Vaginal microbiome and HPV Infection.	Aljosa Mandic
11:55 – 12:10	HPV Vaccination	Aleksandar Stefanovic
12:10 – 12:30	Discussion	

Program

12:30-13:00 Lunch Symposium

12:30-17:00 **ISODOG BOARD MEETING**
(parallel session, per invitation only)

13:00-14:30 LUNCH

14:30-15:50 VIRAL INFECTIONS AND VACCINATIONS IN PREGNANCY
Chair: Zeljko Mikovic , Igor Hudic

SESSION C

14:30 – 14:45	Parvo virus infection in pregnancy. Zeljko Mikovic
14:45 – 15:00	CMV infection in pregnancy. Olivera Kontic Vucinic
15:00 – 15:15	RSV infection in pregnancy Igor Hudic
15:15 – 15:30	Specific vaccinations in pregnancy. Vesna Ecim Zlojutro
15:30 – 15:50	Discussion

15:50-16:10 Sponsored Lecture *

16:10-16:30 COFFEE BREAK

16:30-17:50 INFECTIONS AND WOMAN'S HEALTH
Chair: Sladjana Mihajlovic , Ljubomir Petricevic

SESSION D

16:30 – 16:45	Fertility and infections. Sladjana Mihajlovic
16:45 – 17:00	Endometritis post-partum. Marko Vulic
17:00 – 17:15	Diabetes as a risk for vaginal infection in pregnancy. Vajdana Tomic
17:15 – 17:30	HIV in pregnancy and birth. Ljubomir Petricevic
17:30 – 17:50	Discussion

20:00 **OPENING CEREMONY**
Sava Centar Amphitheatre Hall

Program

24.10.2025 **Day 2** International

07:30-19:00 **REGISTRATION**
Registration Counter, Sava Centar

08:50-09:00 **WELCOME WORDS:**
L. Petricevic, Congress president, ISIDOG vice president

09:00-10:30 **BACTERIAL VAGINOSIS**
Chair: Gilbert Donders (BE) Werner Mendling (DE)

SESSION 1

09:00 – 09:15	Bacterial vaginosis, what we still do not know. Jack Sobel (US)
09:15 – 09:30	BV and Biofilm. Alexander Swidsinski (DE)
09:30 – 09:45	BV as an STI and male treatment Hans Verstraelen (BE)
09:45 – 09:55	OC Nutritional immunity drives zinc sequestration and the selective suppression of beneficial lactobacilli in bacterial vaginosis Gary A Gelbfish
09:55 – 10:05	OC Recurrent Bacterial Vaginosis Prevention (ReBaV) Study Anthi Papahliou
10:05 – 10:30	Discussion

10:30-11:00 **Sponsored Lecture ***

11:00-11:20 **COFFEE BREAK**

Program

11:20-12:50 **AEROBIC VAGINITIS**

Chair: Dace Rezeberga (LV) Hans Verstraelen (BE)

SESSION 2

11:20 – 11:35	**AV diagnosis on Gram stain** Dong Mengting (CN)
11:35 – 11:50	**Aerobic vaginitis and pregnancy.** Svitrigaile Grinceviciene (LT)
11:50 – 12:05	**Aerobic vaginitis still enigma?** Gilbert Donders (BE)
12:05 – 12:15	**OC Metagenomics-based Investigation of Potential Pathogens and Pathogenic Mechanisms in Cervicitis** Fengxia Xue
12:15 – 12:25	**OC Selective Displacement of Lactobacillus crispatus by Prevotella spp. Supports a Role in Early Bacterial Vaginosis Development** Angela Lima
12:25 – 12:50	**Discussion**

12:50-13:20 **Lunch Symposium ***

13:20-14:30 **LUNCH**

14:30- 15:50 **Poster Presentation Gynaecology I**

Chair: Gilbert Donders (BE) Peter Greenhouse (UK)

14:30-15:50 **MICROBIOME = AB STEWARDSHIP**

Chair: Francesco de Seta (IT) Ljubomir Petricevic (AT)

SESSION 3

14:30 – 14:45	**Maternal microbiome and its impact on the offspring.** Daniel Surbek (CH)
14:45 – 15:00	**Missuses of Antibiotics in obstetrics and gynaecology.** Dace Rezeberga (LV)
15:00 – 15:15	**Vestibulovaginitis and side effects of biologicals** Werner Mendling (DE)
15:15 – 15:30	**Strep A Sepsis in pregnancy** Francesca Donders (BE)
15:30 – 15:50	**Discussion**

Program

15:50-16:10 **Sponsored Lecture ***

16:10-16:30 **COFFEE BREAK**

16:30-17:50 **NON-ANTIBIOTIC MODULATION OF THE MICROBIOME**

Chair: Daniel Surbek (CH) Svitrigaile Grinceviciene (LT)

SESSION 4

16:30 – 16:45	**Boric Acid therapy** Jack Sobel (US)
16:45 – 17:00	**Catamenial vaginal infections** Peter Greenhouse (UK)
17:00 – 17:15	**Oral probiotics modulation of microbiome** Ljubomir Petricevic (AT)
17:15 – 17:30	**Immunodeficiency and vulvovaginal infection** Aristotelis Tsiakalos (GR)
17:30 – 17:50	**Discussion**

17:50-18:10 **COFFEE BREAK**

18:10-19:30 **Poster Presentation Gynaecology II**

Chair: Ljubomir Petricevic (AT) Sladjana Mihajlovic (RS)

18:10-19:30 **VULVOVAGINAL CANDIDOSE**

Chair: Valentina Arsic Arsenijevic (RS) Jack Sobel (US)

SESSION 5

18:10 – 18:25	**Vaccination against candida.** Gilbert Donders (BE)
18:25 – 18:40	**Challenge of non albicans vaginal infections.** Francesco de Seta (IT)
18:40 – 18:55	**Candida post partal and neonatal infections.** Werner Mendling (DE)
18:55 – 19:10	**Novel and future candida therapy** Karolina Akinosoglou (GR)
19:10 – 19:30	**Discussion**

21:00-00:00 **PRESIDENT RECEPTION**
(per invitation)

Program

25.10.2025 Day 3 International

08:00-16:30 **REGISTRATION**
Registration Counter, Sava Centar

09:00-11:00 **HPV CONSEQUENCES**
Chair: Aljosa Mandic (RS) Gilbert Donders (BE)

SESSION 6

09:00 – 09:15	**HPV and fertility** Christophe Depuydt (BE)
09:15 – 09:30	**HPV and microbiome** Aljosa Mandic (RS)
09:30 – 09:45	**HPV Vaccination and therapy update** Gilber Donders (BE)
09:45 – 09:55	**OC Exploring vaginal microbiome patterns in relation to HPV persistence: Preliminary insights from the Isala project** Sarah Van den Bosch
09:55 – 10:05	**OC Effects of Ganoderma Lucidum in clearance of HPV infection after the surgical treatment of cervical dysplasis** Nemanja Stevanovic
10:05 – 10:15	**OC HPV-Induced Oropharyngeal Carcinoma** Zorica Novakovic
10:15 – 10:25	**OC Dysbiosis as a Hallmark of Endometrial Cancer: A Systematic Review** Vojka Lebar
10:25 – 11:00	**Discussion**

11:00-11:20 **COFFEE BREAK**

Program

11:20-13:00 **IMPORTANCE OF NEW VACCINES**

Chair: Dace Rezeberga (LV), Aristotelis Tsiakalos (GR)

SESSION 7

11:10 – 11:35	RSV Vaccination and immunisation Anda Radan (CH)
11:35 – 11:50	GBS vaccination an update Austin Ugwumadu (UK)
11:50 – 12:00	OC Update and safety analysis of the ongoing CandVO1 vaccination trial for women with Recurrent Vulvo-Vaginal Candiosis (RVVC) Veerle Van Gerven
12:00 – 12:10	OC Vaginal Microbiota Dynamics and Group B Streptococcus in Pregnancy: Pathways to Reducing Preterm Birth Risk Andreea Monica Marin
12:10 – 12:20	OC Enhancing 2% miconazole crema with 2 doses of dompihen bromide. Results of a first-in-human explorative, double blind, randomized controlled study Gilbert Donders
12:20 – 12:30	OC Understanding the role of the vaginal microbiome in vulvovaginal candidiasis: towards new biomarkers and microbiome-based solutions Vanessa Croatti
12:30 – 13:00	Discussion

13:00-14:10 **LUNCH**

14:10-16:00 **Poster Presentation Obstetrics**

Chair: Gilbert Donders (BE), Dace Rezeberga (LV)

Program

14:10-16:00 **INFECTIONS IN PREGNANCY**

Chair: Ljubomir Petricevic (AT) Austin Ugwumadu (UK)

SESSION 8

14:10 – 14:25	Feto toxic viruses in the pregnancy update Anda Radan (CH)
14:25 – 14:40	Cervical incontinence and vaginal infections Daniel Surbek (CH)
14:40 – 14:55	Vaginal microbiota transplantation. Kilian Vomstein (DE)
14:55 – 15:05	OC Global Insights into Vaginal Candida Infections in Pregnancy: Epidemiology, Species, and Risk Factors Bojana Salovic
15:05 – 15:15	OC Investigating the effect of genital mycoplasmas on adverse pregnancy outcomes: a systematic review and meta-analysis Boglarka Feher
15:15 – 15:25	OC Neonatal Outcomes of Infants Born to GBS positive Mothers Tijana Jovanovic
15:25 – 15:35	OC Self-assessment Questionnaires as Aids for Clinical Symptoms of Vaginal Candidiasis in Pregnancy and Their Evaluation Vladimir Gerginic
15:35-16:10	Discussion

16:10-16:20 **COFFEE BREAK**

16:20-17:50 **INTERACTIVE, QUIZ**

DILEMMA OF PROCEDURES IN SELECTED CASES

Chair and moderation: Gilbert Donders (BE)

Jack Sobel, Gilbert Donders, Svitrigaile Grinceviciene, Surbek Daniel, Aristotelis Tsiakalos

17:50 -18:20 **CLOSING CEREMONY**

(Awards announcement)

Chair: Gilbert Donders (BE) Ljubomir Petricevic (AT)

Program

Day 4 26.10.2025

09:00-12:00 **SCIENCE MEETS THE INDUSTRY**

Chair: Gilbert Donders (BE) Ljubomir Petricevic (AT)

Invited participants only. Free discussion.

Sponsored lectures Program

October 23 rd

10:20-10:50
Sinergija u terapiji vulvovaginalnih infekcija
Olivera Kontic Vucinic (BONIFAR)

12:30-13:00
Imunologija I HPV: Prirodni imunomodulatori kao kljuc podrske terapiji
Irena Arandjelovic (HEMOFARM)

15:50-16:10
Oral probiotic for vaginal dysbiosis
Ljubomir Petricevic (IHCG)

October 24 th

10:30-11:00
The vaginal microbiome and pregnancy: the good, the bad and the ugly
Daniel Surbek (MEDINOVA)

12:50-13:20
Intimate hygiene
Gilber Donders (BAYER)

15:50-16:10
Treatment of vaginal infections during pregnancy : New safety data on Polygynax
Jean-Marc Bohbot (INNOTECH)

Alphabetical List of Lecturers

Aleksandar Stefanović
University Clinical Centre of Serbia, Belgrade, Serbia

Alexander Swidsinski
Charité – Universitätsmedizin Berlin, Germany

Aljoša Mandić
Institute of Oncology of Vojvodina/Faculty of Medicine, University of Novi Sad, Serbia

Anda-Petronela Radan
University Women's Hospital of Inselspital Bern, Switzerland

Aristotelis Tsiakalos
National and Kapodistrian University of Athens, Greece

Austin Ugwumadu
St George's University Hospitals NHS Foundation Trust, London, UK

Borut Kobal
University Medical centre Ljubljana, Slovenia

Christophe Depuydt
AML, Sonic Healthcare, Antwerp, Belgium

Dace Rezeberga
Riga Stradins university, Latvia

Daniel Surbek
University Women's Hospital of Inselspital Bern, Switzerland

Francesca Donders
CHU Brugmann, Brussels, Belgium

Francesco De Seta
University of Trieste, Italy

Gilbert Donders
University of Antwerp/University Hospital Antwerp/Regional Hospital Tienen/Medical Center Aarschot, Belgium

Hans Verstraelen
Ghent University; Ghent University Hospital, Belgium

Igor Hudić
University Clinical Center Tuzla, Bosnia and Herzegovina

Jack D. Sobel
Wayne State University, Harper University Hospital, Detroit, Michigan, USA

Karolina Akinosoglou
University General Hospital of Patras, Greece

Alphabetical List of Lecturers

Kilian Vomstein
University of Copenhagen/Copenhagen University Hospital Hvidovre, Denmark

Ljubomir Petričević
Medical University of Vienna (MedUni Wien)/General Hospital Vienna (AKH), Austria

Maja Čupić
University of Belgrade, Serbia

Marko Vulić
University Hospital Split, Croatia

Mengting Dong
Tianjin Medical University General Hospital, China

Olivera Kontić Vučinić
University of Belgrade/University Clinical Center of Serbia, Belgrade, Serbia

Peter Greenhouse
Menopause & Hormonal Health practice/ Clifton Women's Health, Bristol, UK

Slađana Mihajlović
University Clinical Center "Dr. Dragiša Mišović – Dedinje"/University of Belgrade, School of Medicine, Belgrade, Serbia

Snežana Rakić
University of Belgrade School of Medicine, Belgrade, Serbia

Švitrigailė Grincevičienė
Vilnius University, Lithuania

Vajdana Tomić
University Clinical Hospital Mostar/University of Mostar, Bosnia and Herzegovina

Valentina Arsić Arsenijević
University of Belgrade, Belgrade, Serbia

Vesna Ećim Zlojutro
Faculty of Medicine, University of Banja Luka/University Clinical Centre of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina

Werner Mendling
German Center for Infections in gynecology and Obstetrics, Wuppertal, Deutschland

Zoran Stanković
Mother and Child Health Institute of Serbia

Zoran Vilendecic
University Clinical Centre of Serbia/Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Željko Miković
General Hospital "Narodni front"/University of Belgrade, Belgrade, Serbia

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Organized by

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6th ISIDOG CONGRESS
23-26.10.2025. Serbia, Belgrade, Sava Centar

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80th Anniversary

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LIST OF ABSTRACTS

October 24, 2025

Oral presentations

Session 1

1. Nutritional immunity drives zinc sequestration and the selective suppression of beneficial lactobacilli in bacterial vaginosis – Gary A. Gelbfish
2. Recurrent bacterial vaginosis prevention (ReBaV) study – Anthi Papahliou

Session 2

3. Metagenomics-based investigation of potential pathogens and pathogenic mechanisms in cervicitis – Fengxia Xue
4. Selective displacement of lactobacillus crispatus by Prevotella spp. Supports a role in early bacterial vaginosis development – Angela Lima

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Session 6

5. Exploring vaginal microbiome patterns in relation to HPV persistence: preliminary insights from the Isala project – Sara Van den Bosch
6. Effects of Ganoderma Lucidum in clearance of HPV infection after the surgical treatment of cervical dysplasis – Nemanja Stevanovic
7. HPV-induced oropharyngeal carcinoma – Zorica Novakovic
8. Dysbiosis as a hallmark of endometrial cancer: a systematic review – Vojka Lebar

Session 7

9. Update and safety analysis of the ongoing CandV01 vaccination trial for women with Recurrent Vulvo-Vaginal Candiosis (RVVC) – Veerle Van Gerven
10. Vaginal microbiota dynamics and group B Streptococcus in pregnancy: pathways to reducing preterm birth risk – Andreea Monica Marin
11. Enhancing 2% miconazole crema with 2 doses of dompihen bromide. Results of a first-in-human explorative, double blind, randomized controlled study – Gilber Donders

Session 8

12. Global insights into vaginal Candida infections in pregnancy: epidemiology, species and risk factors – Bojana Salovic
13. Investigating the effects of genital mycoplasmas on adverse pregnancy outcomes: a systematic review and meta-analysis – Boglarka Feher
14. Neonatal outcomes of infants born to GBS positive mothers – Tijana Jovanovic

October 24, 2025

Poster presentations

Gynaecology I

15. The impact of chronic Schistosomiasis and Strongyloidiasis infection upon pregnancy outcomes in a non-endemic country - Talya Finn
16. Point of care diagnosis of bacteria vaginosis in Nepal: a cross- sectional study comparing wet mount microscopy and modified Amsel criteria to Nugent and modified Nugent scoring - Risa Lonnee-Hoffmann
17. Analysis of vaginal microbiome in postmenopausal women with HPV-associated cervical lesions - Chen Wang
18. Safety of Polygynax ®Exposure during Pregnancy: the SPEP study based on French medico-administrative data - Jean-Marc Bohbot
19. Assessing the Clinical Significance of Cervical Cultures in Postpartum Endometritis: Focus on Enterobacterales - Nir Meller
20. Computed Tomography Features of Pelvic Inflammatory Disease Caused by Chlamydia trachomatis and Neisseria gonorrhoeae: A Retrospective Study - Nir Meller
21. Three in-vivo biophysical, microbiome and consumer studies of optimized vulva wash products - Matthieu Le Blond
22. Clinical investigation and analysis of recurrences in the treatment of bacterial vaginosis - Hamar Balazs
23. A novel therapeutic approach for aerobic vaginitis: local vaginal application of traditional Chinese medicine - Junyi Bai
24. Gene Expression of Gardnerella vaginalis in Clinical Specimens Reflects Polymicrobial Interactions in Bacterial Vaginosis - Lucia G.V. Sousa
25. Evaluation of Octenidine Formulations Against Biofilms Associated with Bacterial Vaginosis - Filipa Castro
26. Endoscopic diagnosis of infectious granulomatous diseases in gynecology: Rare case report of Whipple disease manifested as a hydrosalpinx and granulomatous peritonitis and case report of genital tuberculosis - Luka Andric

Gynaecology II

27. Prevalence of STIs and its associated factors among symptomatic women in outpatient clinic in Nepal ongoing study - Santripti Shrestha
28. Urinary Tract Infections and Calcium concentration in urine - Ana Rita Ferrao
29. Influence of human papillomavirus on semen parameters and male infertility: a single-center study - the paper has already been accepted for publication in a journal - Stefan Matik
30. Beneficial effects of a Coriolus versicolor based vaginal gel in conservative approach treatment in nulipara patient with positive H SIL surgical margine after second loop excision procedure-a case report - Aleksandra Petric
31. Determinants of Postoperative Infection Duration after Gynecological Surgery - Stefan Bozic
32. Atypical Vulvovaginitis in the Pediatric and Adolescent Population: Clinical Experience Through Two Case Reports - Jelena Rvovic

33. Laparoscopic Treatment of Bilateral Tubo-Ovarian Abscess Refractory to Antibiotic Therapy - Sanja Milic
34. Prevalence of Bacterial Vaginosis in Pregnant Women with Vulvovaginal Candidiasis - Vera Kujundzic
35. Accuracy of 2 PCR tests for detection of presence of vaginal Candida in patients treated for vulvovaginal Candida infection - Gilbert Donders
36. Evaluation of factors associated with postpartum infections in 2024 at the Clinic of Gynecology and Obstetrics, University Clinical Center of the Republic of Srpska - Danijela Dubravac

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Obstetrics

37. Cytomegalovirus infection in pregnancy – diagnostic and therapeutic dilemmas - Jelica Uljarević
38. A survey of the dynamic changes of vaginal microecology during pregnancy and its correlation with pregnancy outcome - Xiaotong Ma
39. Streptococus anginosus promotes adverse pregnancy outcomes by inflammation - Huanrong Li
40. Lipschütz ulcers in pregnancy - Ivana Paljk Likar
41. Listeriosis During Pregnancy – A Case Report of Vertical Transmission of Infection to the Fetus - Milana Radovanovic
42. "Case report – Hyperbaric oxygen therapy effect on episiotomy wound healing after dehiscence caused by E.coli infection" - Diana Lerinc
43. Lyme Disease in Pregnancy – A Case Report - Andjela Acimovic
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1 NUTRITIONAL IMMUNITY DRIVES ZINC SEQUESTRATION AND THE SELECTIVE SUPPRESSION OF BENEFICIAL LACTOBACILLI IN BACTERIAL VAGINOSIS

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Introduction: Bacterial vaginosis (BV) is a common gynecological condition associated with bothersome symptoms, increased risk of STI transmission, and obstetric complications. We hypothesized that nutritional immunity-related trace metal sequestration may contribute to the replacement of the commensal, D-lactate-producing lactobacilli with a G. vaginalis-associated, multispecies BV microbiome.

Methods: Zinc (Zn) binding by calprotectin (CP) and other Zn-binding proteins was measured in vaginal fluid from women with Lactobacillus-dominated and BV-associated microbiomes. Free and protein-bound metal fractions were separated by ultrafiltration. Concentrations of CP and other metal binding proteins were measured by ELISA. Metal concentrations were quantified by ICP-MS. The pH dependence of metal binding was determined using recombinant proteins. Immunocytochemistry of cells isolated from vaginal swabs and an in vitro VK2 cell model were used to explore the source and mechanism of calprotectin release.

Results: Vaginal fluid samples from women with transitional L iners or BV microbiomes had significantly more protein-bound Zn compared to samples from women with predominantly L. crispatus microbiomes. BV microbiomes were associated with little to no unbound Zn as well with significantly higher CP levels relative to L. crispatus microbiomes. Furthermore, in clinical samples from women with predominantly L. crispatus microbiomes, concentrations of D-lactate in vaginal fluid correlated with the availability of unbound Zn. The source of CP in vaginal fluid was identified as vaginal epithelial cells. We demonstrated that lysins from L. iners and G. vaginalis enhanced CP leakage in a vaginal epithelial cell model. Lastly, we demonstrated that CP's Zn binding activity only occurs substantially above approximately pH 3.9-4.2, consistent with significant Zn binding in BV-dominated microbiomes.

Conclusion: In BV, host-pathogen interactions generate a nutritional immunity response that favors vaginal dysbiosis by selectively suppressing protective D-lactate-producing lactobacilli while having little impact on BV-related bacteria. Specifically, CP is contained in vaginal epithelial cells, and the concentration of CP in vaginal fluid is increased by G. vaginalis and L. iners bacterial lysins. Elevated vaginal pH in BV enhances CP binding of Zn, thereby contributing to creating a Zn depleted environment.

2 RECURRENT BACTERIAL VAGINOSIS PREVENTION (REBAV) STUDY

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INTRODUCTION
Recurrent Bacterial Vaginosis (rBV), defined as ≥3 validated episodes of BV per year, is the leading cause of abnormal vaginal discharge in reproductive-age women and remains a significant public health issue worldwide. Despite decades of research, the etiology, pathogenesis and management of rBV remain incompletely understood. Although not classified as a sexually transmitted infection, BV is strongly associated with sexual behaviors such as multiple partners and lack of condom use. rBV invokes shame, odor, and frustration impairing quality of (sexual) life, and highlights the need for more effective and less toxic therapies.

MATERIALS AND METHODS
In a retrospective cohort, women with proven rBV, and experiencing an acute infection at enrollment were treated with 5 days of clincamycin cream, followed by a regimen of intravaginal probiotics (Gynoflor®, three times weekly (Mo–We–Fr) and an antiseptic (Fluomizin®, once weekly on Sunday), and strict condom use, for the period of 2 months. Patients were re-evaluated after 2 months; if clinical and microscopic normalization occurred, therapy was tapered to twice-weekly Gynoflor® while Fluomizin® and condom use were discontinued. Efficay and treatment compliance where monitored.

RESULTS
Twenty-six women (median age 38 years, range 22–67) were included. Baseline composite symptom score (five key symptoms graded from none to severe) had a median of 6 (IQR 5–7); moderate discomfort was reported by 65%, discharge by 60%, and malodor by 70%. BV scores were positive in 13/15 (2/2) and lactobacillary grade III in 75% of assessable samples, confirming marked dysbiosis. After two months of treatment, 87.5% of women achieved a median six-point reduction in symptom score, and 66.7% improved their BV score. By the third visit, 83.3% maintained symptomatic improvement with continued lactobacillary recovery. Leucocyte counts remained low throughout. Compliance was high and behavioral risk factors did not materially alter outcomes.

DISCUSSION
The present retrospective cohort demonstrates that a regimen combining Fluomizin®, Gynoflor®, and temporary condom use can rapidly reduce symptoms and improve clinical and microbiological indices, addressing key drivers of rBV. Limitations include the retrospective design, absence of a control group, and small sample size. Future prospective randomized trials should compare antiseptic–probiotic combinations with placebo or standard antibiotics, possibly incorporate molecular diagnostics to track microbiome recovery, and evaluate potential of partner treatment and behavioral interventions to achieve durable control of rBV.

3 METAGENOMICS-BASED INVESTIGATION OF POTENTIAL PATHOGENS AND PATHOGENIC MECHANISMS IN CERVICITIS

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Introduction: Cervicitis is one of the most common infectious diseases in gynecology. The cervix serves as the gateway to the upper genital tract, and ascending infections by pathogens may lead to endometritis, salpingitis, and pelvic inflammatory disease, significantly impacting female reproductive health. Currently, less than 50% of cases are attributed to sexually transmitted infections (STIs), while the causative agents remain unidentified in over 50% of patients. Given the anatomical continuity between the cervix and vagina, endogenous pathogens associated with vaginal inflammation may play a role in non-STI cervicitis. However, the specific pathogenic bacteria and their mechanisms remain unclear. This study employed metagenomic sequencing and *in vitro* cellular experiments to explore potential pathogens and their pathogenic mechanisms.

Methods: We conducted a case-control study involving 246 women recruited from Tianjin Medical University General Hospital. The study population included 126 cervicitis patients (105 meeting clinical diagnostic criteria and 21 with confirmed CT/MG/NG infections) and 120 age-matched healthy controls. Cervical and vaginal swabs were collected for metagenomic sequencing using Virgo database. For functional validation, human cervical epithelial cells were co-cultured with G. vaginalis and L. crispatus, followed by assessment of epithelial barrier integrity and inflammatory responses.

Results: In cervicitis patients, *Gardnerella vaginalis*, *Lactobacillus iners*, and *Prevotella bivia* were the dominant species in both cervical and vaginal microbiota, though cervical microbiota exhibited higher β-diversity. Compared to controls, cervicitis patients showed significantly increased relative abundances of *G. vaginalis*, *P. bivia*, *P. timonensis*, *Atopobium vaginae*, and *Chlamydia trachomatis*, along with decreased *L. crispatus*, *L. jensenii*, and *L. helveticus*.
A random forest model incorporating these microbial features demonstrated good diagnostic performance and achieved an AUC of 87.64%. Clinical correlation analysis revealed *C. trachomatis*, *G. vaginalis*, and *A. vaginae* abundances positively correlated with clinical markers (cervical friability, mucopurulent discharge, and elevated leukocytes). *G. vaginalis* exhibited enriched LPS biosynthesis genes. .
Functional analysis of the microbiota indicated potential involvement of inflammatory pathways. In vitro experiments demonstrated that G. vaginalis infection induced epithelial barrier dysfunction, as evidenced by increased LDH release and elevated cervical epithelial permeability. Mechanistic studies revealed that *G. vaginalis*—but not *L. crispatus*—increased LDH release, upregulated TLR2/TLR4/NFkB expression, promoted IL-6/IL-8 secretion, and downregulated tight junction proteins (Occludin, ZO-1), enhancing cervical epithelial permeability.

Discussion: Our findings provide important insights into the microbial ecology of cervicitis and suggest potential pathogenic mechanisms involving cervicovaginal dysbiosis. The identification of characteristic microbial signatures, particularly the enrichment of G. vaginalis and associated anaerobes, expands our understanding of non-STI cervicitis pathogenesis. The robust diagnostic performance of our microbial classifier highlights the potential clinical utility of microbiome-based diagnostic approaches. The functional characterization of G. vaginalis pathogenesis reveals a complex mechanism involving both epithelial barrier disruption and immune activation. These findings are consistent with emerging evidence linking vaginal dysbiosis to inflammatory conditions throughout the female reproductive tract. *G. vaginalis* may trigger inflammation via TLR2/4-NFkB signaling and disrupt epithelial integrity, providing a mechanistic basis for therapeutic targeting.

Keywords: cervicitis, metagenomics, *Gardnerella vaginalis*, TLR/NFkB pathway, cervical epithelial barrier

4 SELECTIVE DISPLACEMENT OF *LACTOBACILLUS CRISPATUS* BY *PREVOTELLA* SPP. SUPPORTS A ROLE IN EARLY BACTERIAL VAGINOSIS DEVELOPMENT

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Introduction/Aims: Bacterial vaginosis (BV) is the most common vaginal infection in women of childbearing age[1] and is associated with adverse pregnancy outcomes, pelvic inflammatory disease, and increased susceptibility to HIV and sexually transmitted infections (STIs)[2]. An optimal vaginal microbiota is dominated by *Lactobacillus* spp., particularly *L. crispatus*, which maintain an acidic environment, whereas BV is characterized by anaerobic bacterial overgrowth[3]. Despite extensive research, the exact cause of BV and the sequence of events preceding *Lactobacillus* spp. displacement remain unclear. Our hypothetical model proposes that *Gardnerella* and *Prevotella* spp. act as early colonizers of the BV biofilm. *Prevotella* spp. are frequently detected in female genital tract infections. Here, we aimed to assess whether certain *Prevotella spp*. can displace *L crispatus* and initiate early BV development.

Methods: Adhesion interference assays with single-species cultures of selected *Prevotella* spp. (*P. bivia*, *P. amnii*, *P. corporis*, *P. copri*, *P. intermedia* and *P. melaninogenica*) were performed using an *in vitro* HeLa cell model, in the presence of a pre-established *L. crispatus* layer[4]. *Gardnerella leopoldii* was used as positive control. Quantification of the bacterial species involved in the assays was subsequently performed using quantitative polymerase chain reaction (qPCR), as previously optimized[5].
Results: The *Prevotella* spp. of interest showed variable adhesion ability to HeLa cells, with *P. corporis* demonstrating the strongest adhesion, surpassing that of *G. leopoldii*. Interestingly, the ability to displace *L. crispatus* was not directly related to each of the *Prevotella's* ability to adhere to Hela cells, with *P. intermedia* being the species that caused the highest reduction, at levels similar to *G. leopoldii*.

Discussion: The results of this *in vitro* study suggest that some *Prevotella* spp. have the potential to play an active role in early BV development, similar to some *Gardnerella* spp, such as *G. leopoldii*. Limitations include the use of only one strain per species and the reliance on a HeLa cell model, a tumor-derived cell line, rather than a normal epithelial cell line that would more closely mimic in vivo conditions.

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5 EXPLORING VAGINAL MICROBIOME PATTERNS IN RELATION TO HPV PERSISTENCE: PRELIMINARY INSIGHTS FROM THE ISALA PROJECT

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Introduction: The vaginal microbiome is increasingly recognized for its vital role in maintaining health. Beyond its influence on reproductive health, it serves as a first line of defence against infections by maintaining a balanced microbial community and producing antimicrobial compounds. Understanding these protective mechanisms could guide novel microbiome-based diagnostics and therapies.

Aims: We launched the Isala project in Belgium to establish a large-scale reference framework for the vaginal microbiome, explore the protective effect of lactobacilli and potentially beneficial strains, and to investigate their role in viral infections. Further research will focus on human papillomavirus (HPV) persistence versus clearance.
Methods/Patients: Via a citizen science campaign, 3345 healthy women donated two vaginal swabs (metagenomics and cultivation) and completing questionnaires. Microbiome composition was mapped using 16S rRNA amplicon sequencing, metagenomics and culturomics. Future analyses will compare the microbiomes of women with cleared versus persistent HPV infections to identify biomarkers and host-microbe interactions. Candidate strains will be tested in advanced vaginal models, such as pseudovirus-infected cells and vagina-on-chip model.

Results: Over 75% of vaginal swabs were dominated by Lactobacillus taxa, particularly L. crispatus and L. iners. In 15% of women, both species co-occurred, indicating a continuum in composition rather than discrete community state types. Most taxa showed small to moderate correlations, clustering into the L. crispatus-, L. iners-, Gardnerella-, Prevotella-, Anaerococcus-, and gut-associated modules. Literature evidence links lactobacilli dominance with efficient clearance, while others are associated with persistence and increased cervical cancer risk. HPV vaccination was associated with lower levels of the Gardnerella module, though no links with specific taxa were observed, raising the question of whether HPV drives dysbiosis or vice versa. Additionally, cultivation yielded diverse Lactobacillus and Limosilactobacillus isolates with protective activity against HPV and other pathogens.

Discussion: Isala provides the largest population-based dataset on vaginal microbiome diversity to date. Combining community profiling, strain isolation, and functional models will help uncover mechanisms of microbiome-mediated HPV clearance and guide the development of lactobacilli-based diagnostics and therapeutics for persistent infections.

6

AN EFFECTS OF GANODERMA LUCIDUM IN CLEARANCE OF HPV INFECTIONS AFTER THE SURGICAL TREATMENT OF CERVICAL DYSPLASIS FOR PATIENTS WITH PREOPERATIVE HPV TYPE 16, 31 AND 33 INFECTION

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Backround/The aim: HPV is a DNA virus that usually causes an asymptomatic infection which spontaneously disappears within the first two years. However, if the infection persists, it can lead to the development of precancerous changes and eventually invasive cervical cancer. These changes are most often caused by high-risk HPV serotypes such as HPV type 16,31,33. Research has shown that active principles of the fungus Ganoderma lucidum have immunostimulatory effects. The aim of this study is to determine the percentage of patients infected with specific HPV serotypes 16, 31 and 33 before and after therapy, and to evaluate the clearance of HPV infection after surgical treatment of cervical dysplasia followed by oral Ganoderma lucidum extract therapy.
Material and methods: A prospective study was conducted with prior written informed consent. The study included 16 female patients (mean age 46.3 years, range 24–75) with histopathologically confirmed precancerous cervical lesions and positive HPV DNA on type 16 12 patients) 31 (1 patient) and 33 (3 patient). Treatment consisted of loop excision of the cervix, followed by oral Ganoderma lucidum extract for 90 days. One month after completing treatment, HPV DNA testing was reeated. Data were analyzed using descriptive statistics.
Results: HPV clearance was observed in 10 out of 12 patient with HPV16, 83,33 . One patient with 31 was without HPV after the treatment and all three patinets with 33 were negative after the treatment.
Conclusion: The preliminary study confirmed a good clearence after the using Ganoderma lucidum posttreatment HPV infections, specially in the most prevalent types HPV16, 31 and 33. A study with a larger number of subjects and a control group is necessary to objectively evaluate the benefit of G. lucidum extract.
Key words: HPV, G. lucidum, cervical cancer

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7 HPV-INDUCED OROPHARYNGEAL CARCINOMA

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Introduction:
Oropharyngeal carcinoma is a type of cancer that develops in the oropharynx, the middle part of the throat located behind the oral cavity, including the tonsils, soft palate, tongue, and posterior and lateral walls of the pharynx. Most oropharyngeal carcinomas are squamous cell carcinomas (squamous cell carcinomas, which include: tonsil, root of the tongue, soft palate, and posterior and lateral walls of the pharynx). These cancers are twice as common in men as in women and are slightly more common in whites than in blacks. Overall, the lifetime risk of developing oral cavity and oropharyngeal cancer is about one in 60 for men and one in 141 for women.

Epidemiological data show that the frequency of oropharyngeal cancer is increasing, especially in countries with a high prevalence of HPV infection. In recent years, a trend of increasing cases among young men has been observed, which is linked to the spread of HPV.

This type of cancer can be associated with several risk factors, including: Human papillomavirus (HPV) infection, especially type 16 – is the most common cause of oropharyngeal cancer. Use of tobacco products - smoking cigarettes and cigars and using chewing tobacco. Excessive alcohol intake. The combination of smoking and alcohol consumption further increases the risk.
Symptoms of oropharyngeal cancer may include: sore throat, difficulty swallowing, changes in voice, problems with opening the mouth completely or moving the tongue, unexplained weight loss, ear pain, enlarged lymph nodes in the neck, swelling in the oral cavity, bleeding from the oral cavity, leukoplakia changes on the tongue or on the mucous membrane of the oral cavity. Diagnosis of oropharyngeal cancer includes history taking, clinical ear examination, endovideopharyngoscopy and endovideolaryngoscopy, biopsy, ph verification with p16 typing, computed tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET).

Treatment of oropharyngeal cancer may include surgery, immunotherapy, chemotherapy, radiation or a combination of these methods, depending on the stage of the disease and the general health of the patient.

Conclusion:

1. Increased awareness of HPV: Younger patients may be less aware of the risks associated with HPV, highlighting the need for education and prevention.
2. Oropharyngeal cancer caused by HPV often has a better prognosis compared to cancers caused by tobacco and alcohol.
3. Importance of vaccination: The HPV vaccine can play a key role in reducing the incidence of this cancer among young people.
4. Multidisciplinary approach: Young patients with this type of cancer may need comprehensive support that includes oncologists, speech therapists, nutritionists and psychologists.
5. In summary, HPV-related oropharyngeal cancer is a growing concern among young people, but it also opens up opportunities for prevention and better treatments.

8 DYSBIOSIS AS A HALLMARK OF ENDOMETRIAL CANCER: A SYSTEMATIC REVIEW

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Introduction
Endometrial cancer (EC) is the sixth most common cancer in women worldwide [1]. Beyond obesity and hormonal risk factors, evidence suggests the genital tract microbiota may contribute to carcinogenesis. We systematically reviewed the literature to identify microbial patterns in EC and highlight future research needs.

Methods
Following PRISMA guidelines [2], we searched PubMed, Cochrane, and Google Scholar (2016–2024). Thirteen studies of the genital tract microbiome in EC using culture-independent sequencing met inclusion. Data on sampling, microbial composition, diversity, and host correlations were synthesized.

Results
A reproducible microbial signature emerged:
• Loss of protective *Lactobacillus spp.* (notably *L. crispatus* and *L. iners*) in 5 studies.
• Enrichment of anaerobes including *Porphyromonas, Prevotella, Atopobium, and Pseudomonas* [3–6]"container-title":"Genome Medicine","DOI":"10.1186/s13073-016-0368-y","language":"en","note":"PMID: 27884207","page":"122","source":"pmc-ncbi-nlm-nih-gov.nukweb.nuk.uni-lj.si","title":"Potential contribution of the uterine microbiome in the development of endometrial cancer","volume":"8","author":[{"family":"Walther-António","given":"Marina R. S."},{"family":"Chen","given":"Jun"},{"family":"Multinu","-given":"Francesco"},{"family":"Hokenstad","given":"Alexis"},{"family":"Distad","given":"Tammy J."},{"family":"Cheek","given":"E. Heidi"},{"family":"Keeney","given":"Gary L."},{"family":"Creedon","given":"Douglas J."},{"family":"Nelson","given":"Heidi"},{"family":"Mariani","given":"Andrea"},{"family":"Chia","given":"Nicholas"}],"issued":{"date-parts":[["2016",11,25]]}},{"id":784,"uris":["http://zotero.org/users/13487668/items/ECVRR2KP"],"itemData":{"id":784,"type":"article-journal","abstract":"Objective\nTo characterize the microbiota of postmenopausal women undergoing hysterectomy for endometrioid (EAC.
• Higher α-diversity in most EC cohorts; α-diversity consistently separated EC from controls.
• Recent work linked microbial taxa with inflammatory and thrombotic pathways [5,6]yet remains relatively underexplored in patients with malignant endometrial disease. In this study, vaginal microbiome samples were prospectively collected at the time of hysterectomy from 61 racially and ethnically diverse patients from three disease conditions: (i.
Six studies were low risk of bias, while heterogeneity in sampling, sequencing, and contamination controls limited comparability.

Discussion
Overall, dysbiosis is a hallmark of EC, marked by a shift from Lactobacillus-dominated to polymicrobial, pro-inflammatory communities. This pattern spans both lower and upper genital tract sites, suggesting ascending colonization. Divergent α-diversity findings likely reflect methodology rather than absence of effect.

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9 UPDATE AND SAFETY ANALYSIS OF THE ONGOING CANDV01 VACCINATION TRIAL FOR WOMEN WITH RECURRENT VULVO-VAGINAL CANDIOSIS (RVVC)

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Introduction

Recurrent vulvovaginal candidiasis (RVVC) is a persistent and poorly understood condition for which there is no definitive cure. Although many women benefit from maintenance regimens such as the ReCiDiF method, an increasing number develop resistance to azoles or experience intolerance to prolonged treatment. Consequently, there is a critical need for a vaccine that can offer long-term protection against this debilitating infection.

Methods

We set-up an international, multi-center, double-blind Phase I/II trial aimed to enroll 251 women with documented RVVC to evaluate the safety and efficacy of CandV01—a novel pentavalent vaccine targeting specific antigens from both *Candida albicans* and non-*albicans* species. This is the vaccine's first evaluation in humans. In Phase I, 32 participants were enrolled into four groups (n=8 per group) to test different vaccine compositions. Two dose levels were evaluated: an initial half-dose group (n=16) followed by a full-dose group (n=16). In both subgroups, half of the participants received the vaccine with an adjuvant, and half without. A second injection of the same dose was administered two months after the first. This report focuses on the safety data from Phase I to inform dose selection for Phase II.

Results

Thirty-two participants were evaluated according to the schedule, except for 8 participants in the half-dose without adjuvant group that received only a single dose. A total of 351 adverse events (AEs) were recorded, with 22% graded as moderate and 2% as severe. The majority of AEs were expected local and systemic reactions—primarily fatigue, injection site pain and headache (respectively 43, 42 and 39 events each). Two serious AEs were reported in a single participant (an operation for tonsillitis and a case of toxic hepatitis), assessed as not related to the vaccine. As of September 2025, the Phase II has initiated enrollment for Step 2, with 88 additional participants included out of a planned total of 219.

Discussion

No safety issues have been identified from the analysis of the Phase I data. Currently the safety and efficacy of the full-dose formulation—with and without adjuvant—versus placebo are being tested in the Phase II of the trial. Approximately one third of the study population has completed vaccination, and final data from the full cohort of 251 patients are foreseen in 2026.

10

VAGINAL MICROBIOTA DYNAMICS AND GROUP B STREPTOCOCCUS IN PREGNANCY: PATHWAYS TO REDUCING PRETERM BIRTH RISK

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Preterm birth (PTB), defined as live birth before 37 weeks of gestation, remains a major global health issue and a leading cause of neonatal mortality. In 2020, 8.2% of live births in Belgium were preterm, contributing to 13.4 million cases worldwide. PTB has multifactorial causes, with ascending vaginal infections being a recognized risk factor. Streptococcus agalactiae (Group B Streptococcus, GBS), linked to PTB, colonizes ~25% of pregnant women. While intrapartum antibiotic prophylaxis is standard, it raises concerns about antimicrobial resistance. In contrast, a vaginal microbiota dominated by Lactobacillus species is associated with full-term birth.

This study investigates vaginal microbiome dynamics during pregnancy and evaluates the anti-GBS potential of vaginal lactobacilli (in-house isolates) for PTB prevention. A cohort of 172 participants provided vaginal swabs each trimester. DNA was extracted, and the V4 region of the 16S rRNA gene was sequenced using Illumina MiSeq to profile the microbiome.

In the first trimester, 93% of women had a Lactobacillus-dominated microbiome, primarily L. crispatus (50%), L. iners (30%), L. gasseri (8%), and L. jensenii (5%). This dominance persisted in 98% and 95% of women in the second and third trimesters, respectively. While 18% experienced shifts in dominant taxa, 76% maintained consistent Lactobacillus dominance. In the third trimester, 11% tested positive for GBS.To assess inhibition of GBS, supernatants from single and mixed cultures of L. crispatus, L. jensenii, and L. reuteri were tested. All significantly inhibited GBS growth after three days in MRS medium, with the triculture showing the strongest effect, suggesting synergy.

These findings support the protective role of Lactobacillus, especially L. crispatus, in reducing GBS colonization and PTB risk. This aligns with Western cohort data and highlights the potential of microbiome-based strategies to improve pregnancy outcomes. Future studies integrating clinical outcomes with microbiome data are needed to guide targeted interventions.

11

ENHANCING 2% MICONAZOLE CREMA WITH 2 DOSES OF DOMPIHEN BROMIDE. RESULTS OF A FIRST-IN-HUMAN EXPLORATIVE, DOUBLE BLIND, RANDOMIZED CONTROLLED STUDY.

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Introduction
Azole therapy, given systemically or locally, is worldwide the cornerstone treatment of Candida vulvovaginitis. However, miconazoles and the other azoles act as fungistatic drug, reducing the activity and viability of Candida sp, but not killing it. Animal experiments show that addition of adjuvants, such as domiphen bromide, may greatly enhance the activity of miconazole local therapy, making it more fungicidal.

Methods
102 patients with clinical vulvovaginal candida (VVC) infection were recruited in 8 clinical research centres in Belgium. They were reandomized in 3 groups of 34 patients treated in a doube blind way with 1) standard treatment of 2% miconazole cream (MCZ) for 5 days, or 2) MCZ crem fortified with 0.14% Domiphen Bromide (DB) or 3) with 0.29% DB. Clinical, mycological and therapeutic outcome was compared at day 15, 29, 57 and 85. Also a PK analysis to test for absorption of MCZ and DB was performed on 5 patients. Intention to treat analysis (ITT) as well as per protocol (PP) analysis are presented.

Results
At Day 15 no significant differences were found in the overall outcome of the 3 treatment groups. However, mycological cure was superior in the 0.14% DB goup at day 1 in both ITT and PP analysis. Also, at day 29 both mycology and therapeutic cure were significantly superior in the 0.14% DB group as compared to both the 0.29% DB and control group. Adverse effects were increased in the high dose DB group, but not in the low dose DB group. PK analysis showed that MCZ is readily absorbed in the circulation, but DB could not be detected in any time point.

Discussion
Low dose DB (0.14%) addition to miconazole cream significantly increases it antifungal activity, but high dose DB (0.29%) addition does not show any therapeutic benefit, and increases the side effect rate. Addition of low concentrations of domiphen bromide has a potential benefit in treatment of VVC and requires further investigation.

12 GLOBAL INSIGHTS INTO VAGINAL CANDIDA INFECTIONS IN PREGNANCY: EPIDEMIOLOGY, SPECIES, AND RISK FACTORS

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Introduction: *Candida* spp. are leading fungal pathogens in immunocompromised individuals and pregnant women. Vulvovaginal candidiasis (VVC) is one of the most common conditions in pregnancy, affecting >30% of women, and can impact both maternal and neonatal health. (1) This study systematically reviewed the literature on VVC in pregnancy to provide a global insight into this issue.

Methods: The study was conducted according to PRISMA guidelines. Literature searches were performed in MEDLINE, Web of Science, and Scopus. Inclusion criteria were studies published in the last 20 years, who reported the prevalence of VVC and evaluation of risk factors in pregnant women. Search terms included combinations of vaginal candidiasis, pregnancy, risk factors, and prevalence.

Results: Thirty-six studies (26,880 women) were reviewed. Most studies originated from Asia (n = 16), followed by Africa (n = 9), Europe (n = 5), America (n = 5), and Australia (n = 1). The prevalence of VVC in pregnancy varies across the globe, ranging from 9.9% in the USA to 65.6% in Tanzania (Fig. 1). When considering broader regional averages, moderate rates are observed in many parts of the world, with prevalence estimated at 38.18% in Asia, 35.98% in Africa, 38.57% in Europe, 23.5% in the Americas, and 38% in Australia. *Candida albicans* was the most frequently identified species, followed by *C. glabrata* and *C. krusei* with the greatest species diversity documented in Asia (Fig. 2). Risk factors included diabetes mellitus, gestational age, gravidity, while less frequent factors encompassed antibiotic use, ethnicity, and socioeconomic status (Table 1).

Discussion: The study highlights considerable regional variability in *Candida* species distribution, as well as heterogeneity in study populations and reported risk factors. While diabetes, gestational age, and multiple pregnancies were frequently identified as key risk factors, a study from Saudi Arabia found that diabetes, pregnancy, and antibiotic use did not appear to predispose women to VVC. (2) Denning et al. (3) predict an increasing trend in VVC by 2030, despite the availability of numerous new treatment regimens. Age, medical history, compromised immunity, and impaired glucose tolerance are widely recognized risk factors for the development of recurrent disease, even though the specific elements that drive the transition from VVC to recurrent VVC remain unclear, as well as taxonomy. (5)

Conclusion: Recognition of key risk factors (diabetes, gestational age, and multiple pregnancies) can guide preventive and therapeutic strategies. Further large-scale studies including diverse regions of the globe are needed to keep pace with the constantly changing prevalence, risk factors, and species distribution of VVC in pregnancy.

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Table 1. Continental Distribution of VVC in Pregnancy

Continent	No. of studies	Pregnant/sample size	Prevalence	Candida species	No. of risk factors
Asia	16	5577/6727	38.18%	12	13
Africa	9	2598/2804	35.98%	7	12
Europe	5	1845/2089	38.57%	10	3
America	5	14755/15159	23.5%	11	15
Australia	1	191/191	38%	2	N/A

Figure 1. Global epidemiological data of the Candida and vulvovaginal candidiasis prevalence in pregnancy in 2023

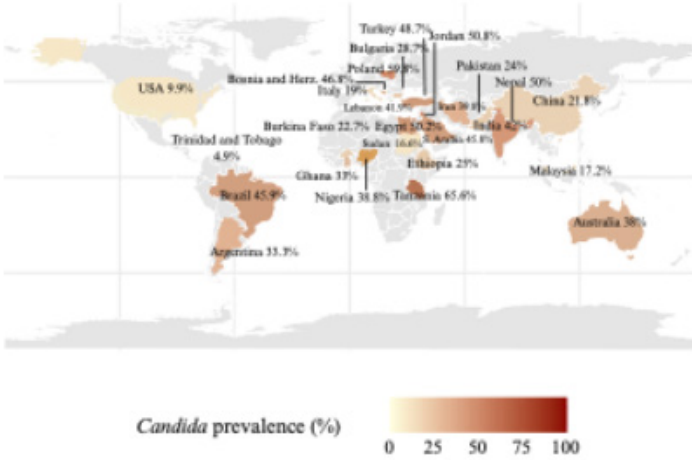
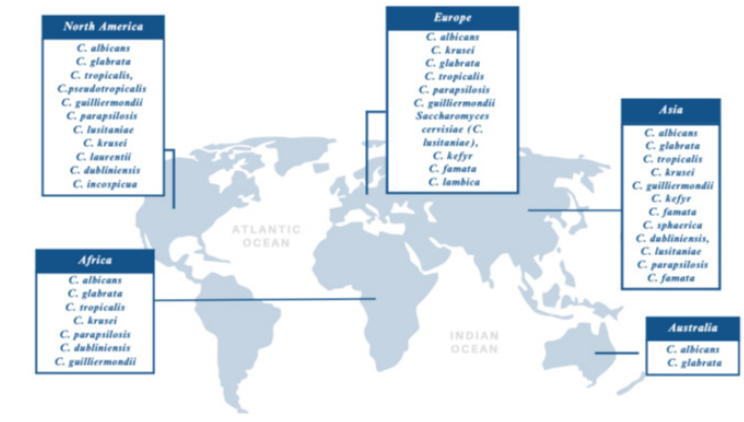


Figure 2. Vulvovaginal candidiasis in pregnancy: the Candida species across different regions



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INVESTIGATING THE EFFECT OF GENITAL MYCOPLASMAS ON ADVERSE PREGNANCY OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Aim:
Up to 80% of pregnant women are affected by genital mycoplasma infection worldwide (Mycoplasma hominis [MH], Mycoplasma genitalium [MG], Ureaplasma parvum [UP], and Ureaplasma urealyticum [UU]). This study aimed to investigate the associations between these bacteria and adverse pregnancy outcomes.

Methods:
We conducted a systematic review and meta-analysis of observational studies published up to 11 November 2023 in Medline, Embase and the Cochrane Library. Eligible studies reported the presence of genital mycoplasmas and at least one adverse pregnancy outcome. Four reviewers independently selected studies and extracted data. Associations were measured using pooled odds ratios (ORs) and mean differences (MDs) with 95% confidence intervals (CIs). Risk of bias was assessed using the QUIPS tool.

Results:
Of 1,896 relevant records, 156 studies were included. The following summarizes the main statistically significant associations identified in the included studies. Genital mycoplasma infections were generally associated with increased odds of preterm birth (PTB), with a borderline finding for UU (OR = 1.65; 95% CI: 0.96-2.86).

US was associated with chorioamnionitis, perinatal death, all PTB subtypes, preterm labor (PTL), spontaneous abortion (SA), premature rupture of membranes (PROM), preterm PROM (pPROM), small for gestational age, and low birth weight (LBW). It was also associated with lower birth weight (MD = -143.4 g); no consistent association was found for gestational age. UU showed the strongest effects for pPROM and PROM, while UP had none for secondary outcomes. MH was associated with early PTB, PTL, PROM, SA, PND, and LBW; MG only with LBW.

Adjusted analyses confirmed an association between MG and PTB (aOR = 2.38), followed by US (aOR = 1.5). Although MH had a similarly elevated estimate, the association did not reach statistical significance (aOR = 1.54; 95% CI: 0.95-2.52). Due to limited adjusted estimates and substantial heterogeneity, we built a multivariate model including species, control group, sampling site, sampling time, and diagnostic method. It confirmed species-specific differences in PTB risk: both UP and MH showed higher risk compared to UU (estimates = 2.32 and 1.13; p = 0.017 and <0.0001, respectively). Sampling site was also a significant predictor: infections detected in the cervix or vagina were associated with lower odds of PTB compared to those in amniotic fluid samples (estimate = -2.70, p = 0.003).

Discussion:
Genital mycoplasmas appear to play a species-specific role in preterm birth and are associated with a broader range of adverse outcomes. Multivariate modeling confirmed the relevance of both pathogen type and sampling site. While causality cannot be confirmed, these findings support the clinical importance of genital mycoplasma detection in pregnancy. Future interventional studies using standardized diagnostics and randomized treatment protocols are needed.

14 NEONATAL OUTCOMES OF INFANTS BORN TO GBS POSITIVE MOTHERS

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Introduction:
Streptococcus agalactiae (Group B Streptococcus, GBS) infection represents a significant cause of neonatal morbidity and mortality. Vertical transmission during delivery can lead to sepsis, pneumonia, and meningitis in neonates. The standard of prevention is intrapartum antibiotic prophylaxis (IAP), but the outcome depends on the timeliness and adequacy of its administration. According to national guidelines for the prevention of neonatal GBS disease, since 2017 intrapartum prophylaxis has been implemented, requiring antibiotic administration at least four hours before delivery. Prophylaxis given less than four hours before delivery is not considered adequate.

Objective:
The aim of this study was to compare the outcomes of neonates vaginally born to GBS-positive mothers who received adequate IAP with those of neonates whose mothers did not receive prophylaxis according to the protocol.

Methods:
A retrospective study was conducted including neonates delivered vaginally by mothers with confirmed GBS colonization, during the period from August 1, 2024, to August 1, 2025, at the Department of Obstetrics and Gynecology, University Hospital Center "Dr D. Misovcć-Dedinje," Belgrade, Serbia. Two groups were formed: the first consisted of neonates whose mothers received adequate IAP, and the second of neonates whose mothers did not receive prophylaxis according to the protocol. Data analyzed included gestational age, birth weight, clinical signs of infection, laboratory parameters (CBC, CRP), need for oxygen therapy, antibiotic therapy, and length of hospitalization.

Results:
The study included 335 neonates born vaginally to GBS-colonized mothers. Adequate IAP was administered in 56.1% of cases, while in 49.2% of cases prophylaxis was not performed according to protocol. Comparison between the two groups indicates that adequate intrapartum antibiotic prophylaxis significantly reduces the risk of early neonatal GBS infection, the need for antibiotic therapy, and the length of hospitalization. The need for supplemental oxygen did not show statistical significance between the two groups. Univariate statistical analysis was used to compare the occurrence of neonatal sepsis between the two groups.

Conclusion:
The results confirm the importance of routine maternal screening and timely intrapartum antibiotic prophylaxis. Nevertheless, a certain number of neonates still require empirical therapy and additional monitoring, underscoring the need for continuous education and standardization of perinatal care protocols.

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15 THE IMPACT OF CHRONIC SCHISTOSOMIASIS AND STRONGYLOIDIASIS INFECTION UPON PREGNANCY OUTCOMES IN A NON-ENDEMIC COUNTRY

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Background
Schistosomiasis (Sch) and strongyloidiasis (SS) are reportedly associated with poor pregnancy outcome (PPO) but other factors present in low-income endemic countries could have confounded these observations. By taking a migrant population living in a high income country we hope to ascertain the causal effect of these parasitic infections on PPO.

Methods and materials
Retrospective study reviewing the medical records of females aged 18-45 years for whom serology testing was performed for Schistosomiasis (Sch) or Strongyloides stercoralis (SS) between January 2012-October 2022. Serology testing was performed by the national laboratory. Reasons for testing were multiple such as eosinophilia. Positive cases were those with either SCh or SS positive serology/PCR or positive pathology results. Patients with negative serology for both parasites were the control group. "Co-infection" refers to positive serology for both SS and Sch. Each pregnancy will be counted separately if full delivery details are available meaning that information will be available regarding the total number of people and also the number of deliveries. This will add to the statistical power of the study. Fisher's exact or Chi square tests were used to determine significance.

Results
Serology was available for 83 females (28% SS, 31% Sch, 8% co-infection, 48% were negative for both). 81% were of Ethiopian origin. Average age range 32-34 years. The average time from immigration to diagnosis was 19 years (Sch) and 16 years (SS). 1 SS patient had HIV, 2 Sch cases had active hepatitis B. Medical notes were available for 16 SS patients who had delivered in our hospital (26 deliveries), 19 Sch (36 deliveries), 6 co-infection (12 deliveries) and 40 negative cases (59 deliveries). The average Haemoglobin upon admission at the time of diagnosis was 11.8 g/dL (Sch), 11.5 g/dL (SS), 11.3g/dL (negative). Regarding pregnancy outcome, placental abruption was significantly more common amongst females with SS as compared with the control group (p value = 0.0263) and premature rupture of membranes (PROM) was significantly more common in Sch (p value = 0.0185) and co-infection patients (p value = 0.0266). There was no significant difference in the birth weight, week of delivery, miscarriage rate, intrauterine growth retardation, post-partum haemorrhage or pre-eclampsia rates between the control group and SS/Sch/co-infection. One SS case had hyper-infection and bacteremia with Streptococcal pyogenes.

Conclusions
Placental abruption and premature rupture of membranes were statistically more common amongst pregnant females with SS, Sch or co-infection (respectively). Overall PPO appears less common than previously suggested. This could be partially explained by the fact that our population was a migrant population in a resource-rich environment without the additional confounders of malnutrition and other tropical diseases that may have influenced pregnancy outcome in studies performed in low-income endemic countries.

16

POINT OF CARE DIAGNOSIS OF BACTERIA VAGINOSIS IN NEPAL: A CROSS- SECTIONAL STUDY COMPARING WET MOUNT MICROSCOPY AND MODIFIED AMSEL CRITERIA TO NUGENT AND MODIFIED NUGENT SCORING

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Introduction/Aim: Nugent scoring (N3) is the research gold standard for diagnosing bacterial vaginosis (BV), while point-of-care tests (POCTs) such as Amsel criteria and wet mount microscopy (Wet3) are commonly used in clinical settings (1-3). In three-category systems (N3, Wet3), the "intermediate" category in N3 and the "partial" category in Wet3 complicate treatment decisions (3).
Amsel criteria typically use 3 of 4 signs: pH > 4.5, positive whiff test, and clinician-assessed pathological vaginal discharge (VD). In LMICs, high prevalence of *Trichomonas vaginalis* (TV) may contribute to diagnostic variation (4).
This study compares the diagnostic performance of Wet3, modified Wet3 (Wet2), and two Amsel versions—clinician-reported (AmselClin) and patient-reported (AmselPat)—against N3 and a modified two-category Nugent score (N2). TV prevalence across methods is also examined.

Methods/patients: This cross-sectional sample is part of a randomized controlled trial in Nepal, evaluating POCTs to reduce unnecessary antibiotic use for symptomatic VD in outpatient clinics. After instruction, VD was self-sampled with nylon flocked swabs. Two slides were prepared: one gram-stained and read by a microbiologist, the other air-dried and read by a gynecologist. Patients were examined by regular clinicians.
For N2, intermediate scores were considered negative unless clue cells were present (5). Wet2 merged partial BV with BV. Amsel required 3 of 4 criteria and was assessed in two groups: clinician-confirmed and patient-reported VD. TV was diagnosed via PCR from urine. Kappa, sensitivity, and specificity were used to assess correlation of Wet3, Wet2, AmselClinician, and AmselPatient with N3 and N2.

Results: Between April 2024 and May 2025, 1214 women were enrolled, mean age was 35.9 years (SD 9.8), 130 (10.7%) were 49 years or older and 37 (3%) were pregnant; 1166 cases were analyzed after excluding unreadable/missing slides. 10% of Nugent slides were cross-read with 70% full agreement (kappa 0.51) and weighted kappa of 0.62.
BV prevalence varied across methods: AmselClinician (7.2%), Wet3 (13.7%), N3 (22.5%), Wet2 (25.3%), AmselPatient (25.5%), and N2 (30.1%). Kappa values indicated slight agreement (<0.2) between POCTs and N3, and moderate agreement for N2 with

AmselPatient (0.40) and Wet2 (0.43). This is also reflected in higher sensitivities for the same tests, see table 1. The prevalence of TV was 15.6 % (Wet3)19.3 % (AmselPatient), 23.3 %(N3, N2), 27,4% (AmselClinician) and 37% (Wet2).
Sensitivities and specificities are in Table 1.

Discussion. Correlation between POCTs and Nugent scoring was low. Only the modified Nugent score (N2), dividing the intermediate group clue cells, showed moderate correlation. High TV prevalence affected in particular the wet mount microscopy, highly prevalent in the "partial" category, though this may have limited clinical relevance due to similar antibiotic treatment.

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Table 1 Comparing point of care tests for bacterial vaginosis (BV) to Nugent scoring (N3) and modified Nugent scoring (N2) [1]

		Nugent score (N3)[4] n=1166			Modified Nugent score (N2)[3] n=1153[5]	
Wet mount (Wet3)[2] n=1166 n(%)		7-10 BV	4-6 intermediate	0-3 no BV	BV	No BV
	Full BV	99(61.9)	38(23.8)	23(14.4)	121(76.6)	37(23.4)
	Partial BV	45(33.3)	40(29.6)	50(37)	66(48.9)	69(48.9)
	No BV	118(13.5)	187(21.5)	566(65)	160(18.6)	700(81.4)
sensitivity% specificity%[4]		***38/93***	***15/77***	***88/57***	See wet mount merged, below	
Wet mount, merged (Wet2) n(%)	Full/partial BV	144(48.8)	78(26.4)	73(24.7)	187(63.8)	106(36.2)
	No BV	118(13.5)	187(21.5)	566(65)	160(18.6)	700(81.4
sensitivity% specificity%[4]		**55/1/**	**29/1**	**89/42**	**54/87**	
Amsel criteria, clinician reported aVD[6] (AmselClin) n(%)	BV	39(46,4)	22(26.2)	23(27.4)	49(58.3)	35(41.7)
	No BV	223(20.6)	243(22.5)	616(56.9)	298(27.9)	771(72.1)
sensitivity% specificit%[4]		**15/95**	**8/93**	**4/88**	**14/96**	
Amsel criteria, patient reported aVD[7] (AmselPat) n(%)	BV	139(47)	89(30.1)	68(23)	180(62.5)	108(37.5)
	No BV	123(14.1)	176(20.2)	571(65.5)	167(19.3)	698(80.7)
sensitivity% specificity%[4]		**53/82**	**34/77**	**89/43**	**52/87**	

1 (Nugent, Krohn et al. 1991)
2 (Donders 2007)
3 Modified Nugent score (N2): Intermediate vaginal flora was classified as indicative of bacterial vaginosis (BV) in the presence of clue cells, and as not indicative of BV when clue cells were absen.
4 Compared to reference values an"one vs all test" for sensitivities/specificities is used when one variable has three categories.
5 Eleven slides had missing data for clue cells.
6 Vaginal discharge either profuse, yellow or other color than white, or smelling fishy or rotten
7 All participants where included, because inclusion criteria was " main problem abnormal discharge"

17 ANALYSIS OF VAGINAL MICROBIOME IN POSTMENOPAUSAL WOMEN WITH HPV-ASSOCIATED CERVICAL LESIONS

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Introduction/Aim:
Emerging evidence reveals distinct alterations in vaginal microbiota composition among postmenopausal women compared to their premenopausal counterparts. However, less is known about the specific vaginal profiles associated with cervical lesion progression in postmenopausal populations. This study aims to analyze the differences in the vaginal microbiome between premenopausal and postmenopausal women. Furthermore, it seeks to investigate the correlation between the postmenopausal vaginal microbiota and cervical lesions, with a specific focus on identifying differentially abundant microbial taxa associated with cervical high-grade squamous intraepithelial lesions (HSIL).

Methods/Patients:
Nanopore 16S rRNA full-length sequencing was conducted on vaginal microbiota samples obtained from 393 women categorized into four groups: (1) normal controls (HPV-negative; n=95) comprising postmenopausal (n=48) and premenopausal (n=47) subgroups; (2) chronic inflammation cases (HPV-positive; n=84) with postmenopausal (n=45) and premenopausal (n=39) subgroups; (3) cervical LSIL patients (n=91) divided into postmenopausal (n=46) and premenopausal (n=45) subgroups; and (4) cervical HSIL cases (n=123) consisting of postmenopausal (n=58) and premenopausal (n=65) subgroups. This comparative microbial analysis aimed to identify inter-group variations in vaginal microbiome composition.

Results:
1. 1.Differences in vaginal microbiota between normal postmenopausal and premenopausal women: Significant differences were observed in both α-diversity and α-diversity of the vaginal microbiota between the two groups. In postmenopausal women, the abundance of Lactobacillus and L. iners significantly decreased, while the abundance of Sneathia, Atopobium, Streptococcus anginosus, and Atopobium vaginae significantly increased.
2. 2.Differences in vaginal microbiota between postmenopausal women with cervical lesions and normal postmenopausal women: No obvious differences were
3. observed in α-diversity of the vaginal microbiota between the two groups, but significant differences were found in α-diversity. The abundance of L. crispatus in women with cervical HSIL significantly decreased compared to normal postmenopausal women.
4. 3.Differences in vaginal microbiota between premenopausal women with cervical lesions and normal premenopausal women: The α-diversity of vaginal microbiota in premenopausal women with cervical HSIL was increased, with no significant differences in α-diversity observed among different degrees of cervical lesions. The abundance of Atopobium and certain types of Prevotella was notably higher in premenopausal women with cervical HSIL.

Discussion:
Compared to premenopausal women, postmenopausal women's vaginal microbiota shows higher diversity, reduced abundance of Lactobacillus, and significantly increased abundance of Atopobium vaginae and Streptococcus anginosus, etc. The abundance of L. crispatus is significantly reduced in postmenopausal patients with cervical HSIL. These findings suggest L. crispatus may serve as a potential microbial biomarker for cervical health surveillance in postmenopausal populations.

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SAFETY OF POLYGYNAX® EXPOSURE DURING PREGNANCY: THE SPEP STUDY BASED ON FRENCH MEDICO-ADMINISTRATIVE DATA

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Introduction
Women with vaginal infection during pregnancy are at higher risk of complications, both for them and their newborns. However, there is a lack of clinical data or insufficient quality of clinical data on their benefit-risk balance assessment in pregnant women. The SPEP study assessed the safety of Neomycin-Nystatin-Polymyxin B combination (NNP-Polygynax®) exposure during pregnancy on the risk of Major Congenital Malformations (MCM) and hearing impairment in newborns.

Methods
This exposed/unexposed cohort study used the French National Health Data System (SNDS), focusing on pregnancies resulting in live births between October 2013 and December 2019. Mother and child stays were linked using common identifiers.
The associations between the exposure to NNP during the first 12 Weeks of Gestation (WG) or any time during pregnancy, and the overall risk of MCM or hearing impairment, respectively, in maternal-child pairs, were assessed. Univariate analyses were performed and, if applicable, multivariate logistic regression models and multivariate Cox regression models with sandwich estimators to account for intra-mother correlation, were used for MCM and hearing impairment risks, respectively. MCM were assessed at birth and hearing impairment up to the age of two.

Results
This study included 3,491,247 maternal-child pairs, 30,268 (0.87%) exposed to NNP during the first 12 WG and 91,397 exposed (2.62%) at any time during pregnancy. Newborns with at least one MCM represented 1.18% of the unexposed group, and 1.24% of the NNP-exposed group. Multivariate analysis showed no statistically significant difference in the risk of MCM related to NNP exposure during the first 12 WG (Estimated adjusted odds-ratio=1.047 [95% CI: 0.944 – 1.162], p=0.381).
Univariate analysis showed no significant association between NPP exposure during pregnancy and the risk of hearing impairment in children (crude HR=0.949 [95% CI: 0.819 – 1.100], p=0.489).

Discussion
This comprehensive real-world study did not identify increased risk of MCM nor of hearing impairment in living newborns after in utero exposure to NNP. These findings support the safety of NNP use in pregnant women with vaginal infections. Further explorations of MCM in stillborn babies or in fetuses of women exposed to NNP who underwent medical termination of pregnancy will be performed to confirm these results.

Keywords Vaginal infections, drug safety, Major Congenital Malformations, ototoxicity, pregnancy exposure, SNDS, RWE, Neomycin, Nystatin, Polymyxin B,

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ASSESSING THE CLINICAL SIGNIFICANCE OF CERVICAL CULTURES IN POSTPARTUM ENDOMETRITIS: FOCUS ON ENTEROBACTERALES

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**equal contribution*

Aim:
To evaluate the clinical significance of cervical cultures positive for Enterobacterales in postpartum endometritis by examining associations between bacterial culture indices—such as bacterial richness, organism diversity, and antibiotic susceptibility—and clinical parameters of disease severity.

Methods:
This retrospective cohort study was conducted at a tertiary medical center between 2011 and 2021. Cervical cultures from postpartum women clinically suspected of having endometritis were assessed, with a focus on those positive for Enterobacterales. Data collected included demographics, obstetric history, clinical presentation, laboratory markers, hospital stay duration, readmission rates, and outpatient follow-up visits. Statistical analyses compared disease severity between groups based on bacterial richness (rich versus medium-low growth), culture purity (pure versus mixed), and antibiotic treatment appropriateness.

Results:
The study cohort included 91 patients with postpartum endometritis cervical culture positive for Enterobacterales species. Rich bacterial growth was significantly associated with older maternal age (p=0.02), cesarean delivery (p=0.0005), longer hospital stays (p=0.02), and increased outpatient visits (p=0.02). Neither bacterial richness nor purity significantly correlated with fever, inflammatory markers, or readmission rates. Furthermore, inappropriate antibiotic therapy was not associated with worse clinical outcomes compared to adequate treatment.

Conclusions:
Uterine cervical bacteriologic cultures offer limited clinical value in assessing disease severity or informing treatment decisions in cases of postpartum endometritis, even when Enterobacterales are identified.

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COMPUTED TOMOGRAPHY FEATURES OF PELVIC INFLAMMATORY DISEASE CAUSED BY CHLAMYDIA TRACHOMATIS AND NEISSERIA GONORRHOEAE: A RETROSPECTIVE STUDY

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Objective:
To characterize computed tomography (CT) findings in women with pelvic inflammatory disease (PID) due to PCR-confirmed *Chlamydia trachomatis* or *Neisseria gonorrhoeae*, and to identify imaging features that may aid diagnosis in the emergency setting, especially when PID is not clinically suspected.

Methods:
We conducted a retrospective study of 44 female patients who underwent abdominal or pelvic CT in the gynecology emergency department and tested positive for *C. trachomatis, N. gonorrhoeae*, or both. CT images were re-evaluated by a senior radiologist for signs consistent with PID. Imaging findings were compared across three analyses: (1) cases correctly vs. incorrectly diagnosed in the original radiology report, (2) concordant vs. discordant interpretations between original and retrospective reads, and (3) differences between infections caused by *C.trachomatis* and *N.gonorrhoeae.*

Results:
CT features suggestive of PID were retrospectively identified in 77.3% of cases, yet only 64.7% of these were initially reported as PID. The most frequent findings included fat stranding/haziness (86.4%), free pelvic fluid (79.5%), and peritoneal thickening or enhancement (72.7%). Tubo-ovarian abscesses (TOAs) were observed only in correctly diagnosed cases (p=0.02), while peritoneal thickening was significantly more common in discordant interpretations (100% vs. 62.5%, p=0.01), highlighting a commonly missed yet potentially diagnostic sign. When stratified by pathogen, fallopian tube thickening was significantly more frequent in *C.trachomatis*-related PID (48.5%) than in *N.gonorrhoeae* (11.1%; p=0.013).

Conclusion:
CT imaging can reveal PID-related findings even when the clinical suspicion is low. However, subtle features—especially peritoneal thickening—are often under-recognized. TOAs are more readily identified due to their overt presentation. Notably, fallopian tube thickening appears more common in chlamydial infections, reflecting their insidious progression. Increased radiologist awareness of subtle CT markers may improve diagnostic rates and reduce complications through timely treatment.

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THREE *IN-VIVO* BIOPHYSICAL, MICROBIOME AND CONSUMER STUDIES OF OPTIMIZED VULVA WASH PRODUCTS

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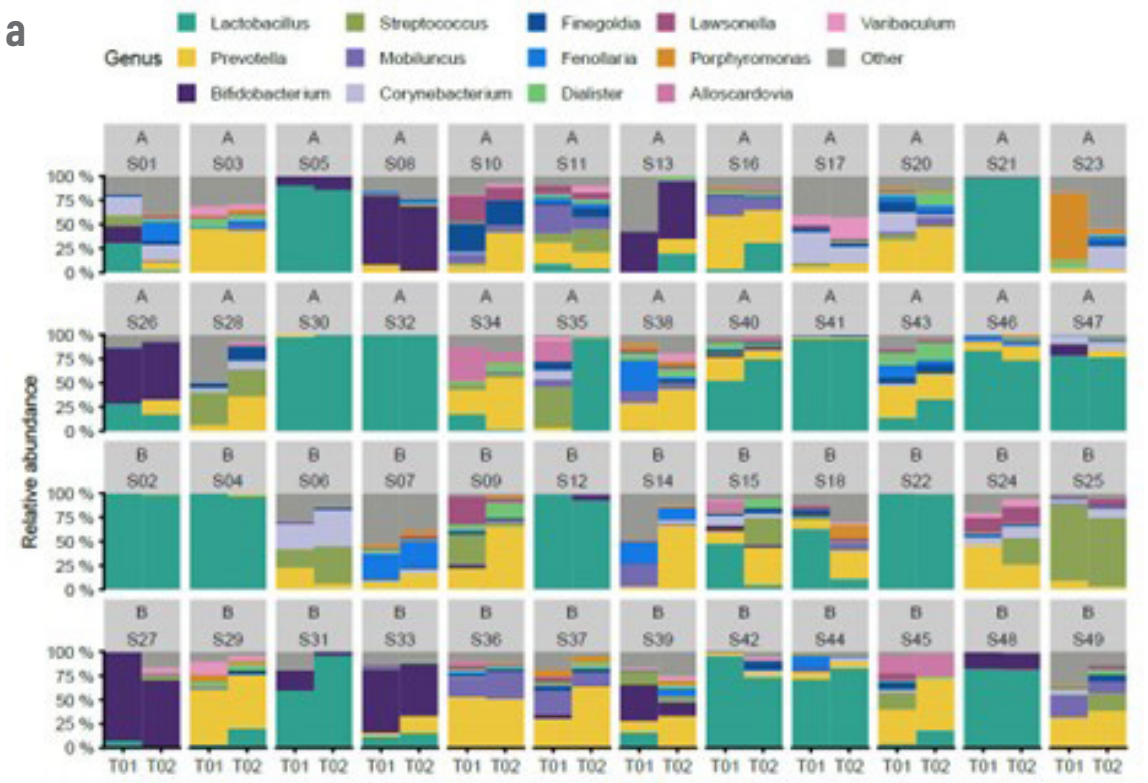
[4]Excelya Germany GmbH

Objectives:
Intimate hygiene is currently sub-optimally addressed, and data, guidelines and expert recommendations are lacking while we know that vulvar skin and ecosystem are sensitive. When formulating intimate cleansers, in addition to performance, products should be gentle on the skin and not disturb the natural microbiome given the potential for microbial crosstalk between the vagina and vulva regions[1]. Two Canesten intimate washes (CanesFlora Daily Protection Wash, CanesCalm Soothing Wash) containing ultra-mild surfactant, lactic acid, prebiotics and moisturizers with a pH=4.8, have been developed. Three *in-vivo* tests were carried out to assess their tolerability, their impact on vulvar skin and microbiome, and consumer experience of product performance and acceptance.

Materials and Methods:
The first *in-vivo* study on 95 healthy women evaluated the impact of both products on vulvar skin assessed by a gynecologist, skin hydration, superficial sebum, barrier function (TEWL), and skin pH, measured before and after 28 days of product usage. Subject questionnaires on product performance were also collected along with vulvar microbiome swab for a subpanel of 48 subjects. Subjective performance and safety of CanesCalm Soothing Wash was also assessed for 7 days on 53 healthy women with regular non-pathological vulvar itching / discomfort. Finally, both products were tested for 7 days on 52 women with vaginal infection (bacterial vaginosis (BV) or vulvovaginal candidiasis (VVC)) with self-assessment questionnaires and safety evaluations.

Results:
After 28 days, no significant differences to baseline were observed with both product for skin hydration, amount of superficial sebum, TEWL or skin pH on healthy women. Visual objective dermatological skin evaluation by a gynecologist demonstrated that products were well tolerated. Overall microbial composition remained stable over the 28-day period, suggesting maintenance of the vulvar microbiome (Figure 1.) and consumer scores were strongly positive in relation to product performance.


a
Genus
Lactobacillus
Prevotella
Bifidobacterium
Streptococcus
Mobiluncus
Corynebacterium
Finegoldia
Fenollaria
Dialister
Lawsonella
Porphyromonas
Alloscardovia
Varibaculum
Other
Relative abundance
100 %
75 %
50 %
25 %
0 %
T01 T02

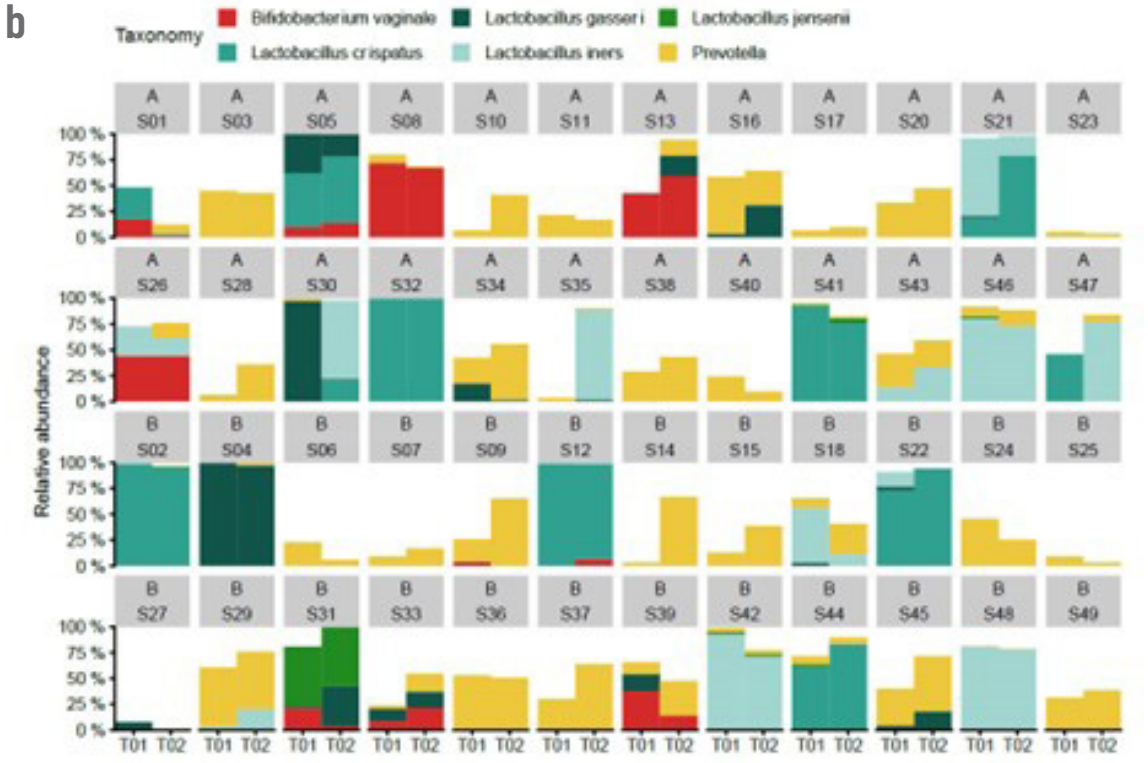

b
Taxonomy
Bifidobacterium vaginale
Lactobacillus crispatus
Lactobacillus gasseri
Lactobacillus iners
Lactobacillus jensenii
Prevotella
Relative abundance
100 %
75 %
50 %
25 %
0 %
T01 T02

Figure 1. Taxonomic profiles at (a.) genus level and (b.) of the five species and one genus of specific interest, for both products (A - CanesCalm Soothing Wash (n = 24) and B – CanesFlora Daily Protection Wash (n = 24)) at baseline (T01) and after 28 days (T02).

For women with non-pathological vulvar itching / discomfort, immediate and long-lasting relief was seen. On subjects with BV or VVC, feedback was also strongly positive on ability to effectively cleanse the area while being gentle and suitable for use during vulvovaginal infection. All studies showed products are safe for use.

Summary:
Cleansing of the vulva region is an important part of intimate hygiene, but its unique location and physiology require special consideration to the formulation of intimate washes. Two specially designed vulva wash products have been tested *in-vivo* and shown to maintain the vulvar skin biophysical properties and microbial diversity and provide excellent consumer acceptance on healthy women, women with non-pathological vulvar irritation and women with vulvovaginal infection.

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22 CLINICAL INVESTIGATION AND ANALYSIS OF RECURRENCES IN THE TREATMENT OF BACTERIAL VAGINOSIS

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Introduction: It is well known that conventional treatment recommendations for BV (e.g. CDC) recommend topical or systemic metronidazole or clindamycin, with a success rate of 80-90%. However, there is a high rate of recurrence (around 30-60%) 3 months after the end of treatment. This has been shown to be particularly marked in cases where BV is caused by mixed infection (G. vaginalis and A. vaginae), these two pathogens being the main components of the vaginal biofilm that has formed. Our aim was to perform a comprehensive epidemiological study of women with bacterial vaginosis after diagnosis by vaginal pH test, followed by treatment using conventional and alternative methods.

Material and methods: 137 patients presenting to the outpatient clinic of both departments of the Department of Obstetrics and Gynaecology of Semmelweis University with symptoms of bacterial vaginosis were diagnosed by Amstel criteria using a non-invasive method (vaginal pH test strip). The patients were divided into 4 groups. Women in the first group were treated with metronidazole in oral (2x1 tablet) and topical (1 vaginal tablet in the evening) form. Patients in the second group received only topical (1 vaginal tablet in the evening) metronidazole treatment. Patients in the third group received topical (1 dose of vaginal cream applied by applicator in the evening) clindamycin. Finally, patients in group 4 received vaginal (1 vaginal tablet in the evening) dequalinium chloride treatment.
The following factors were assessed during data collection: age, smoking status, contraceptive method use, parity, being pregnant, previous history of infection (especially BV), recurrence, Amstel criteria.
In the second phase of our study, we conducted control examinations at weeks 4 and 12 after the baseline examination. We assessed the patients' test results (amstel criteria, vaginal pH measurement), existing complaints (if any), whether they had completed the recommended therapy (if so, why not), and whether there were any side effects during treatment.
If recurrence of BV was detected in any of the control studies, DQC therapy was introduced in all patients. If necessary, vaginal ecotherapy was added to the treatment.

Results: We would report our results in the presentation.

Conclusion: In our research, we also wanted to show that as professionals, we need to think about restoring and maintaining a healthy vaginal balance, in addition to the well-known and expanding range of medication options, to help our patients experience their femininity in full physical and emotional comfort.

Authorisation: Regional Institutional Scientific and Research Ethics Committee of Semmelweis University (207/2023)

23 A NOVEL THERAPEUTIC APPROACH FOR AEROBIC VAGINITIS: LOCAL VAGINAL APPLICATION OF TRADITIONAL CHINESE MEDICINE

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Introduction: Aerobic vaginitis (AV) is a vaginal inflammatory condition characterized by a marked reduction in Lactobacillus levels and an overgrowth of aerobic bacteria. According to the 2018 European (IUSTI/WHO) guideline for the management of vaginal discharge, clindamycin cream is the first-line recommended treatment for uncomplicated AV. However, clindamycin has notable limitations: it may not target all AV-associated pathogens and is prone to inducing antibiotic resistance, contributing to high recurrence rates. Destructive Distillation Extract of Hawthorn Seed (DDEHS), a traditional Chinese medicine, has shown promise in preclinical studies by targeting AV pathogens and demonstrating therapeutic efficacy against AV. However, the efficacy compared to antibiotics needs further research. This study aims to compare the efficacy of DDEHS and antibiotics and explore the efficacy of their combined use.

Methods: A total of 226 patients with AV (diagnosed by an AV score ≥ 3) were enrolled from May 2017 to February 2025 and randomized into three groups: Group A received local vaginal application of DDEHS twice a day for 7 days, Group B received cefuroxime orally for 7 days, and Group C received both. Cure and recurrence rates were evaluated post-treatment (7±3 days or 28±3 days). In vitro, the study assessed DDEHS's MIC, MBC, growth curves against four AV pathogens and Lactobacillus, and calculated the FICI with cefuroxime, observing their effects on biofilm growth using confocal laser scanning microscopy (CLSM).

Results: Group A, B, and C had microbiological cure rates (AV score < 3) of 58.8%, 52.1%, and 72.3%, Group C showed better efficacy than Group B (P = 0.042). Recovery to normal Lactobacillus microflora (LBG IIb/III to I/IIa) was 45.8%, 39.5%, and 55.3%, while recurrence rates were 11.7%, 15%, and 10.3%. DDEHS MICs were 1:64 for AV pathogens (S. aureus, E. coli, E. faecalis, and S. agalactiae), and 1:32 to 1:8 for Lactobacillus spp. FICI indicated an additive effect with cefuroxime. CLSM showed DDEHS inhibited biofilm formation effectively, while the combination of DDEHS and cefuroxime exhibited the most effective inhibition.

Conclusion: This study indicates that compared to cefuroxime, DDEHS shows a tendency to increase the cure rate and reduce the recurrence rate; however, the differences are not statistically significant. Moreover, when cefuroxime is used in combination with DDEHS, the cure rate of AV treated with cefuroxime can be significantly increased. DDEHS also demonstrates its advantage in restoring normal vaginal microecology. These clinical results were further confirmed by in vitro experiments. In vitro experiments have confirmed the antibacterial and anti-biofilm activities of DDEHS, and the combined use with cefuroxime shows an additive effect, which consistent with clinical efficacy. The function of inhibiting biofilms in DDEHS in vitro experiments explains its trend of reducing recurrence rates, and the difference in MIC between lactobacilli and AV pathogens explains their role in restoring normal vaginal microecology. However, the exact antibacterial mechanism of DDEHS is unclear. Previous network pharmacology studies suggest that the NF-κB, Toll-like receptor (TLR), and TNF signaling pathways may mediate its anti-infective effects, but further validation is required. This study provides a new approach for the treatment of AV. DDEHS is a traditional Chinese medicine that can be used locally in the vagina. Using DDEHS helps restore the vaginal flora, improves treatment outcomes, reduces recurrence, and decreases antibiotic resistance. This work bridges traditional medicine and modern science, offering actionable insights for clinicians treating AV.

24 GENE EXPRESSION OF *GARDNERELLA VAGINALIS* IN CLINICAL SPECIMENS REFLECTS POLYMICROBIAL INTERACTIONS IN BACTERIAL VAGINOSIS

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Introduction/Aim: Bacterial vaginosis (BV) is the most common vaginal infection among women of reproductive age. It is characterized by a shift from a *Lactobacillus*-dominated microbiota to a diverse community of anaerobic species that interact, forming a polymicrobial biofilm on the vaginal epithelium[1]. *Gardnerella vaginalis* has been recognized as the primary pathogen in the overwhelming majority of BV cases[2]. However, despite its high prevalence, the transcriptomic alterations that occur during the development of BV remain poorly understood. This study aimed to evaluate the expression of four selected *G. vaginalis* genes, previously highlighted during an RNA-sequencing analysis of *in vitro* triple-species BV-associated biofilms composed of *G. vaginalis*, *Fannyhessea vaginae*, and *Prevotella bivia*, in vaginal specimens collected from women with BV.

Methods: Vaginal specimens were collected longitudinally from women with baseline normal vaginal microbiota who provided twice daily self-collected vaginal specimens for 60 days or until incident BV (Nugent score 7-10 on ≥4 consecutive specimens)[3]. BV cases were matched 1:1 to women maintaining optimal vaginal microbiota for the majority of the study (controls). RNA was extracted from six specimens for each BV case collected in the three days before the development of BV, the day of BV diagnosis, and the two days after; control specimen days selected for RNA extraction were matched by menses date. The expression of four *G. vaginalis* genes was quantified using quantitative PCR (qPCR). The microbial composition of each specimen was assessed using 16S rRNA sequencing targeting the V4 hypervariable region.

Results: qPCR analysis revealed variable gene expression patterns across the specimens from BV cases. Notably, expression of three of the four genes was detected in only one sample within the control specimens. The 16S rRNA sequencing results showed a clear difference in the composition of BV cases and controls; BV cases had high species diversity, while controls were predominantly dominated by *Lactobacillus* species.

Discussion: The expression of the four *G. vaginalis* genes examined in vaginal specimens was not correlated with the presence of *F. vaginae* or *P. bivia*, which were used in the *in vitro* biofilm model. This suggests that other species present in the vaginal specimens may influence the gene expression of *G. vaginalis* during BV, supporting the role of polymicrobial interactions in the development of BV. The detection of three of the four targeted genes in only one of the healthy controls suggests the potential of these genes to be used as diagnostic markers to discriminate between BV-positive and BV-negative cases.

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25 EVALUATION OF OCTENIDINE FORMULATIONS AGAINST BIOFILMS ASSOCIATED WITH BACTERIAL VAGINOSIS

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[2]LABBELS –Associate Laboratory , Braga/Guimarães, Portugal;
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Background: Bacterial vaginosis (BV) is the most common vaginal infection in women of reproductive age. Its recurrence is linked to polymicrobial biofilms that protect anaerobes and reduce antibiotic efficacy. With rising resistance, new biofilm-targeted strategies are needed. This study evaluated the antimicrobial and antibiofilm effects of octenidine dihydrochloride/phenoxyethanol (octiset®) and octenidine using a multispecies BV model.

Methods: Suspensions of *Gardnerella vaginalis, Fannyhessea vaginae, Prevotella bivia, Peptostreptococcus anaerobius* and *Mobiluncus curtisii* were prepared in NYCIII medium. Planktonic cultures were treated with octiset® (50%, 25%) or octenidine (0.1%, 0.05%) for 24h under anaerobic conditions. Biofilms were exposed to octiset® or octenidine for 10 min, 1h and 4h. For *G. vaginalis*, additional assays tested octiset® (100%, 25%, 12.5%, 6.25%, 3.125%) and octenidine (0.1%, 0.05%, 0.025%, 0.0125%). Polymicrobial biofilms containing all five species were established for 24h and exposed to octiset® (50%, 25%) or octenidine (0.1%, 0.05%). Positive controls consisted of NYCIII + bacteria, except for the 100% octiset® condition, where 0.9% NaCl + bacteria were used. After treatment, CFUs were quantified, and when no growth occurred, VBNC assays confirmed absence of recovery up to 72h.

Results: Planktonic assays showed dose- and time-dependent killing. Octiset® 50% eradicated *G. vaginalis, F. vaginae* and *P. bivia*, while octenidine 0.1% strongly reduced *G. vaginalis* and *F. vaginae*. In biofilms, octiset® 50% markedly reduced CFUs. For *G. vaginalis*, octiset® 25–50% decreased viability in a time-dependent manner, and octiset® 100% eradicated biofilms. *F. vaginae* was also highly susceptible, with elimination at octiset® 50% and octenidine 0.05%. *P. bivia* biofilms were eradicated with octiset® 50%, while *P. anaerobius* showed almost complete loss at this condition but only partial reductions with lower concentrations. *M. curtisii* was less affected, with partial decreases at octiset® 50% and octenidine 0.1%. Recovery assays showed minimal regrowth, and VBNC confirmed absence of viable cells when CFUs were undetectable. In polymicrobial biofilms, CFU quantification revealed a clear reduction of both compounds compared to controls. However, tolerance was higher than in single-species biofilms, and overall, octiset® consistently outperformed octenidine.

Conclusion: Octiset® and octenidine showed strong antimicrobial and antibiofilm activity. Octiset®, particularly at 50% and 100%, showed superior efficacy, achieving complete eradication in several conditions and preventing regrowth for at least 72h. In polymicrobial biofilms, eradication was not achieved under the tested conditions, that were limited to 4h exposition. Ongoing work is being performed to optimize exposure times, concentrations, and application protocols to enhance activity against complex polymicrobial biofilms.

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ENDOSCOPIC DIAGNOSIS OF INFECTIOUS GRANULOMATOUS DISEASES IN GYNECOLOGY: RARE CASE REPORT OF WHIPPLE DISEASE MANIFESTED AS A HYDROSALPINX AND GRANULOMATOUS PERITONITIS AND CASE REPORT OF GENITAL TUBERCULOSIS

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Introduction

Granulomatous disease arises from organized aggregates of macrophages in response to persistent infectious stimuli. In gynecology, tuberculosis and actinomycosis are the most frequent infectious causes, while fungal and parasitic etiologies are rarer. These conditions often imitate neoplasia or endometriosis on imaging and clinical examination, so histologic confirmation is essential. Laparoscopy provides direct visualization and targeted biopsy and is frequently decisive when routine laboratory tests and imaging are non-specific. In peritoneal tuberculosis, laparoscopy has high diagnostic performance—reported sensitivities around 84–100% and specificities up to approximately 98%—and is particularly helpful in distinguishing peritoneal TB from carcinomatosis, a scenario further complicated by the fact that CA-125 may be elevated in TB as well. Whipple disease, caused by *Tropheryma whipplei*, is a rare multisystemic infection with protean manifestations, classically including arthralgia, weight loss, and diarrhea, and it is prone to diagnostic delay. Diagnosis relies on histology with periodic acid–Schiff (PAS)–positive macrophages and is confirmed with PCR and, when needed, immunohistochemistry, while timely, prolonged antibiotic therapy is crucial to prevent relapse and neurologic complications. The aim of this work is to underscore the role of laparoscopy in the diagnosis of infectious granulomatous conditions in gynecology through a detailed case of Whipple disease that presented as hydrosalpinx with granulomatous peritonitis and a brief illustrative case of suspected genital-peritoneal tuberculosis in an adolescent.

Case reports

The first patients was a 27-year-old woman underwent diagnostic laparoscopy for suspected left hemato/hydrosalpinx and peritoneal endometriosis after months of chronic abdominal pain, low-grade fevers, and 12 kg weight loss. Imaging showed a small ascites, hepatosplenomegaly, peritoneal thickening, and a dilated left tube; CA-125 was 159 U/mL. Laparoscopy revealed miliary whitish implants, dense adhesions, an inflamed dilated tube, and ~200 mL serous ascites. Left salpingectomy with multi-site peritoneal/omental biopsies demonstrated granulomatous salpingitis and peritonitis; Ziehl–Neelsen stain, cultures, and mycobacterial PCR were negative. Weeks later she deteriorated with fever, pleural effusion, recurrent ascites, lymphadenopathy, and a further rise in CA-125. After a focused re-history elicited intermittent migratory arthralgias over the preceding months, Whipple disease entered the differential. Upper endoscopy with duodenal biopsies was non-diagnostic (after antibiotics), but re-review of the laparoscopic specimens revealed PAS-positive inclusions compatible with *T. whipplei*, including within the muscular layer of the fallopian tube. Oral trimethoprim–sulfamethoxazole was initiated with rapid clinical recovery and completion of a 12-month course without relapse.
The second patient was a 19-year-old referred to our clinic with a working diagnosis of abdominal and pelvic tuberculosis. Diagnostic laparoscopy with ascites sampling and biopsies of granulomatous-appearing peritoneal lesions provided tissue for definitive histopathology and microbiology to guide therapy.

Discussion

Infectious granulomatous disease of the female pelvis is a great clinical mimicker: ascites, miliary peritoneal deposits, dense adhesions, and tubal dilatation can resemble advanced ovarian malignancy or extensive endometriosis, while serum tumor markers may be nonspecifically elevated. In this setting, endoscopic evaluation—most often laparoscopy—assumes a pivotal diagnostic role. Direct visualization allows recognition of characteristic yet overlapping patterns, careful mapping of disease distribution, and, crucially, targeted multi-site biopsies of peritoneum, omentum, and adnexa with concurrent ascites sampling. By coupling high-quality tissue acquisition with an integrated laboratory pathway—routine histology, special stains (Ziehl–Neelsen and PAS), mycobacterial culture and PCR, and reflex organism-directed testing when indicated—endoscopy provides the shortest and most reliable route from broad radiologic suspicion to an actionable, pathogen-specific diagnosis.

Our experience illustrates this value across the spectrum of infectious etiologies. In the adolescent with suspected genital-peritoneal tuberculosis, laparoscopy established the diagnosis pathway by documenting the extent and morphology of disease and by securing specimens adequate for histopathology and microbiology, which remain the gold standard for TB confirmation. Just as importantly, early endoscopic tissue diagnosis prevents therapeutic drift toward oncologic algorithms when imaging is ambiguous and CA-125 is elevated.

The second case, although rare, underscores why the differential diagnosis in granulomatous salpingo-peritonitis must extend beyond tuberculosis. When mycobacterial studies are repeatedly negative and granulomatous inflammation persists, Whipple disease should remain on the diagnostic radar. Endoscopic sampling made it possible to demonstrate PAS-positive inclusions compatible with *Tropheryma whipplei* and to pursue confirmatory testing, guiding the transition from empiric to organism-directed therapy. The observation of PAS-positive material within the muscular layer of the fallopian tube in this patient—an exceptionally uncommon pattern in the gynecologic setting—further argues for broad, systematic sampling during laparoscopy rather than restricting biopsies to the most obvious peritoneal deposits.

Considered together, these cases underscore that endoscopy offers a unified, etiology-agnostic framework for diagnosing pelvic infectious granulomatous disease—from prevalent causes such as tuberculosis to rare entities like Whipple disease. In women presenting with ascites, peritoneal implants, and tubal disease, a laparoscopic strategy with meticulous visual documentation, multi-site biopsies, and parallel pathology–microbiology workflows should be considered standard practice. This approach shortens time to a definitive diagnosis, prevents misclassification as malignancy or isolated endometriosis, and, most importantly, enables timely initiation of etiology-specific therapy.

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TITLE: "PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS AND ASSOCIATED FACTORS AMONG SYMPTOMATIC WOMEN ATTENDING OUTPATIENT CLINICS IN NEPAL."

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Background: Sexually Transmitted Infections (STIs) are one of the common causes of vaginal discharge (VD) and significant public health concerns worldwide (1). One quarter of women in low- and lower-middle-income countries experience bothersome VD, which may indicate underlying infections (2,3)particularly among women in Asia. Although presumed to be caused by reproductive tract infections (RTIs. This study aims to determine the prevalence of STIs caused by *Chlamydia trachomatis (Ct), Neisseria gonorrhea (Ng),* and *Trichomonas vaginalis (Tv)* among women complaining of VD, and to examine the association between sociodemographic risk factors, and clinical findings with STIs.

Methodology: The cross-sectional study was conducted as a part of an RCT in a Nepalese teaching hospital and its outreach centers. Women reporting bothersome VD were enrolled in the study. Molecular tests with high diagnostic accuracy *(Cepheid GeneXpert®)* were used to detect *Ct, Ng,* and *Tv* using self-collected urine samples (4)thus interrupting transmission and preventing the sequelae of untreated infections. Currently, there are several point-of-care (POC. Clinical findings regarding participants' vaginal and cervical discharge were recorded by the attending health practitioner. Data collected between April 2024 and May 2025 was analyzed. Associations between STIs and independent variables (age group, education, marital status, study site, clinical findings) were assessed using Fisher's exact test or binary logistic regression. Variables with significant associations were further analyzed using binary logistic regression to estimate crude odds ratios (cOR) with 95% confidence intervals (CI). The significance level was set at 5% (p-value <0.05) and 95% CIs are presented.

Results: Of 20,196 women approached, 1441 were eligible and 1316 participated (1000 suburban, 316 rural; inclusion rate: 91.3%). Invalid results (n=36) for STI tests were excluded from the analysis leaving 1280 cases for analysis. The median age of the participants was 35 years [IQR 14].
Overall STI prevalence was 15.8% CI [13.8-17.9%] with *Ct, Ng,* and *Tv* at 3.7% CI [2.7-4.8%], 1.1% CI [0.6-1.8%], and 12.2% CI [10.5-14.2%] respectively. No significant association between the prevalence of STIs in suburban and rural populations, education and marital status was found. Younger women (18-28 years) had significantly higher STI risk compared to middle age

(29-38years: COR 0.64 CI [0.44-0.94]; 39-48 years: cOR 0.6 CI [0.4-0.9]).
Participants who did not undergo speculum examination (n=138) were excluded from analysis of clinical findings. Pathological vaginal discharge (profuse, smelling rotten/fishy, yellow/other color) was significantly associated with *Tv;* profuse: cOR 2.2 CI [1.45-3.3]; smelling rotten/fishy: cOR 2.76 CI [1.42-5.37]; yellow/other color: cOR 2.3 CI [1.44-3.74]. For 399 participants, clinicians reported cervical discharge (15 excluded after hysterectomy). Pathological cervical discharge (profuse, yellow and other color discharge from cervix) was significantly associated with *Tv* cOR 2.42 CI [1.37-4.28]. For 90(61%) of participants with *Tv*, the clinician did not describe pathological VD and for 30 (51.7%) no pathological cervical discharge.

Conclusion: We observed a high prevalence rate of *Tv* among women in both semi-urban and rural settings. Among socio-demographic factors, younger age was significantly associated with STI risk. The finding of pathological vaginal or cervical discharge was indicative of an approximate doubling of the risk of *Tv* infection. On the other hand, in approximately half of the *Tv* positive participants, no pathological discharge was reported. Depending on available resources, a low threshold for *Tv* testing or treatment may be advisable with the risk factors described with high *Tv* prevalence.

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28 URINARY TRACT INFECTIONS AND CALCIUM CONCENTRATION IN URINE

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Introduction/Aim: Ions in urine are useful biomarkers for the diagnosis of several diseases and therapeutic monitoring, and the determination of calcium (Ca) in urine is one of the most prescribed (1, 2, 3). Different levels of Ca have been associated with microorganism adhesion to cells when it comes to the development of bacterial infections (4).

Methods/Patients: In this study, the determination of Ca was performed in 161 urine samples from patients with ongoing urine cultures. To understand if there is any dependence between the results of urine cultures and Ca concentration, a statistical test was performed. With 10 negative samples form microbiology tests, the surplus urine samples were artificially contaminated with an *Escherichia coli* strain and subsequently incubated on MacConkey agar for 24h.

Results: For Ca, 25 "low" values were observed in samples with positive cultures and 31 "low" values in those with negative cultures, 24 "normal" values were associated with positive cultures and 29 "normal" values for negative cultures, while 12 "high" values were found in positive cultures and 40 "high" values in negative cultures. There was a significant association between Ca concentrations and urine culture results. Values of Ca in positive urine cultures are significatively lower than in negative urine cultures. In experimentally contaminated negative urine samples, bacterial growth did not seem to affect Ca ions concentration, as the measured values remained similar before and after contamination.

Discussion: These results suggested that the presence of UTI may either lead to a decrease in urinary Ca levels, or that lower urinary Ca levels can promote bacterial growth and the development of UTI. Some authors have shown that bacterial adhesion to the epithelium can trigger an influx of Ca ions, thereby enhancing the inflammatory response (5), and this may be the reason why these results show lower Ca values in positive urine cultures.
Furthermore, it has been also described that lower environmental Ca concentrations seem to be associated with increase growth of Gram negative bacteria (6). The results showed that these types of bacteria do not seem to proliferate in environments with low Ca concentrations. Although bacterial growth does not appear to modify the urinary Ca concentration *in vitro* over a 24-hour window, this experience is not sufficient to rule out the idea that bacterial growth can potentiate Ca influx and decrease of Ca values in urine *in vivo*. In conclusion, the presence of higher concentrations of Ca may facilitate the multiplication of *E.coli*, which can probably generate a depletion of Ca *in vivo* to putatively potentiate an inflammatory response.

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INFLUENCE OF HUMAN PAPILLOMAVIRUS ON SEMEN PARAMETERS AND MALE INFERTILITY: A SINGLE-CENTER STUDY

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Introduction/Aim
Human papillomavirus (HPV) has recently gained great attention in andrology [1]. This study aimed to detect the presence of HPV DNA in semen and evaluate its association with semen quality.

Methods/Patients
Single-center case-control study including 50 men from infertile couples and 10 proven-fertility men as controls, conducted at hospital 'Plodnost', in Bitola, N.Macedonia. Computer-aided semen analysis and seminal HPV detection and genotyping using real-time PCR were performed.

Results
HPV DNA was detected in the semen of 9 men from the infertile couples (18.0%) and 1 proven-fertility control (10.0%). Among the infertile couples, HPV-positivity was associated with: increased progressive motility (p=0.0399), increased presence of sperm with excess residual cytoplasm (p=0.05) and a lower percentage of normal acrosomes (p=0.05). Kinematic parameters, including straight-line velocity (p=0.0235), average path velocity (p=0.0434), linearity (p=0.05), wobble (p=0.05) and beat-cross frequency (p=0.0239) were significantly higher in HPV-positive infertile men. Compared to fertile controls, HPV-positive men from the infertile group exhibited significantly lower: sperm concentration (p=0.0493), total motile sperm count-TMSC (p=0.0291) and mucus penetration ability (p=0.0088), alongside a reduced percentage of morphologically normal sperm (p=0.05). Conversely, they had higher rates of sperm with: excess residual cytoplasm (p=0.05), tail deformities (p=0.05), neck and midpiece deformities (p=0.0499).

Discussion
The higher progressive motility observed within the infertile couples when seminal HPV is present could be explained by enhanced mitochondrial metabolic activity, eventually leading to greater oxidative damage [2]. These sperm also show greater linearity, suggesting resistance to hyperactivation; along with poorer morphology-likely due to HPV-mediated inhibition of sperm's Aquaporin-8 [3]. Reduced sperm concentration in HPV-positive men from the infertile group compared to fertile controls may also stem from increased oxidative damage, while the lower TMSC represents a strong negative predictor of IVF success and spontaneous pregnancy [4]. These findings support a role of seminal HPV in impairing sperm quality and function, contributing to male infertility. Further longitudinal studies are needed.

Keywords: HPV, semen analysis, male infertility, PCR

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BENEFICIAL EFFECTS OF A CORIOLUS VERSICOLOR BASED VAGINAL GEL IN CONSERVATIVE APPROACH TREATMENT IN NULIPARA PATIENT WITH POSITIVE H SIL SURGICAL MARGINE AFTER SECOND LOOP EXCISION PROCEDURE-A CASE REPORT

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The relationship between endocervical and ectocervical margin status and residual or recurrence after cervical intraepithelial neoplasia (CIN) resection has been controversial. Park et al. pointed out that a positive incisional margin will increase the residual or recurrence rate after CIN resection. Alder et al. pointed out that the margin status cannot accurately predict post-operative residual or recurrence.

Clinical case: Patient was 30 year old who came at the Institute with PAP smear L SIL four months after loop excision because of H SIL in other hospital. Cytology was reported according to the Bethesda system. Histopathological diagnosis was regarded as negative for intraepithelial lesion or malignancy (NILM) when no abnormalities with evidence of HPV were detected. Histopathological low-grade squamous intraepithelial lesion (LSIL) was defined as either HPV atypia/atypia condylomatosa or cervical intraepithelial neoplasia grade 1 (CIN1). Cervix was epithelialized after procedure no macroscopically suspicious. Colposcopy was normal findings. Detection of HPV was not performed before the initial treatment so in this situation the biopsy and endocervical curettgue was performed. Final histopathological findings was H SIL on ectocervix and endocervix forth months after initial treatment. Re-Loop excision with endocervical curettague (ECC) was performed, 28.02.2022. Final histopathological findings was H SIL with focal positive ectocervical surgical margins and ECC was negative on displasia.
Because of re- treatment and nuliparity we suggest patients conservative approach with Papilocare gel every evening for 21 days, pause during menstruation and repeated for next two menstrual cycles 1x1, 21 days, overall three months. Papilocare© (Procare Health, Spain) is a vaginal gel that combines components with moisturizing, tissue regeneration, and microbiota-balancing properties (hyaluronic acid, Centella asiatica, Aloe vera and _-glucan oligosaccharide) with ingredients that have positive effects on HPV-dependent cervical lesions and HPV clearance (Coriolus versicolor, Azadirachta indica and carboxymethyl-_-glucan)

Six months after the treatment control PAP smear was NILM such as HPV was negative. Colposcopy findings on egzocervix was negative, with Lugol positive.

Keywords: Positive surgical margines, cervical dysplasia

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31 DETERMINANTS OF POSTOPERATIVE INFECTION DURATION AFTER GYNECOLOGICAL SURGERY

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Introduction/Aim:

Postoperative infections represent a major challenge in gynecological surgery with a direct impact on morbidity, length of hospitalization and overall treatment costs. Identification of determinants influencing their duration is crucial for better outcomes. The aim of this study was to analyze the association between surgical duration, comorbidities, microbiological agents and antibiotic therapy with the course of infection and time to microbiological negativisation.

Methods/Patients:

A retrospective analysis included 14 patients rehospitalized or with prolonged hospital stay due to postoperative infections after gynecological surgeries performed in 2024 at the University Clinical Center of the Republic of Srpska. Evaluated parameters were: age, comorbidities, type and duration of surgery, microbiological agents, duration of antibiotic therapy and time to wound swab negativisation. Statistical analysis was performed using SPSS (Pearson correlation and t-test; significance $p<0.05$).

Results:

Longer surgical duration significantly correlated with time to microbiological negativisation ($r=0.54$; $p=0.04$) and length of antibiotic therapy ($r=0.56$; $p=0.039$). More complex procedures (abdominal hysterectomy, Wertheim–Meigs) were associated with prolonged infections compared with shorter procedures (episiotomy, curettage). Gram-negative microbiological agents, particularly *Acinetobacter* and *Pseudomonas aeruginosa*, were linked with longer infection duration (7–8 days), while *Enterococcus* and *Staphylococcus epidermidis* were associated with earlier microbiological negativisation (≈3 days). Obesity tended to prolong infection, whereas hypertension and diabetes showed no significant effect. Application of VAC therapy was observed in patients with more severe infections and delayed recovery.

Discussion:

Prolonged surgical duration was identified as the main determinant of extended postoperative infections in gynecological surgery. Optimizing surgical time together with early targeted antibiotic therapy appear to be crucial strategies for reducing morbidity, shortening hospitalization and improving clinical outcomes.

32 ATYPICAL VULVOVAGINITIS IN THE PEDIATRIC AND ADOLESCENT POPULATION: CLINICAL EXPERIENCE THROUGH TWO CASE REPORTS

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Background:

Vulvovaginal infections are a frequent cause of gynecological consultations in children and adolescents. Anatomical and hormonal differences between prepubertal and pubertal girls result in distinct clinical features and therapeutic needs. In younger girls, infections are often nonspecific, while in adolescents, hormonal changes and sexual activity increase the risk of fungal, bacterial, and sexually transmitted infections.

Objective:

To present two distinct cases of vulvovaginitis around menarche, emphasizing diagnostic and therapeutic challenges in atypical presentations.

Methods:

Case 1: An 11-year-old premenarchal girl presented with acute swelling and necrotic labial lesions after travel. Extensive investigations found no pathogen. She required antibiotics, local care, and surgical debridement, with gradual recovery. Case 2: A 10-year-old premenarchal girl had pruritus and excoriations of the labia. A vulvar swab isolated beta-hemolytic Streptococcus. Targeted antibiotics and local antiseptics led to rapid resolution.

Results:

These cases demonstrate the spectrum of pediatric vulvovaginitis. Case 1 illustrates an atypical, severe form requiring multidisciplinary management, while Case 2 shows a common bacterial infection with prompt therapeutic response.

Conclusion:

Vulvovaginitis in girls ranges from typical bacterial infections to rare, severe, and unexplained forms. Accurate diagnosis, age-specific evaluation, and individualized therapy are essential. Multidisciplinary care may be required in complex cases.

Keywords:

Vulvovaginitis, pediatrics, beta-hemolytic streptococcus, necrosis, adolescent infection, individualized therapy, case report

33 "LAPAROSCOPIC TREATMENT OF BILATERAL TUBO-OVARIAN ABSCESS REFRACTORY TO ANTIBIOTIC THERAPY"

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Introduction/Aim: A tubo-ovarian abscess (TOA) is a serious complication of pelvic inflammatory disease (PID) that can lead to sepsis, abscess rupture and permanent loss of fertility. The aim of this case report is to present the clinical course, management, and outcome of a patient with bilateral TOA unresponsive to conservative therapy.

Methods: We report the case a 35-year-old female patient who presented with lower abdominal pain and fever. Clinical and ultrasound examination confirmed a bilateral TOA. **Results:** Due to persistent clinical symptoms after the administration of antibiotic therapy, lack of improvement in the patient's condition and the size of the process, it was decided to perform a laparoscopic revision. During surgery, abscess drainage, adhesion lysis, and bilateral salpingectomy were performed. Following surgery, the antibiotic regimen was adjusted based on clinical response and laboratory findings. The recovery was rapid, and the patient was discharged in good general condition on the fifth day after surgery.

Conclusion: This case highlights the importance of early diagnosis, timely antibiotic therapy, and appropriate surgical intervention. Laparoscopy represents an effective and minimally invasive treatment option for TOA cases unresponsive to conservative therapy. Early detection through various diagnostic methods and timely treatment are essential to reduce the risk of long-term complications.

Keywords: tubo-ovarian abscess, PID, laparoscopy, salpingectomy, antibiotics

Introduction:
Tubo-ovarian abscess (TOA) is a severe complication of pelvic inflammatory disease (PID), most commonly seen in sexually active women of reproductive age (1,2,3). It is typically caused by an ascending infection from the vagina and cervix. Sexually transmitted bacteria, especially *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, play a major role and are often associated with this condition (1,2,3,5). Additionally, microorganisms from the vaginal flora such as strict and facultative anaerobes, *Gardnerella vaginalis*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*, *Haemphilus influenzae*, enteric gram-negative bacilli like *E. coli*, and *Streptococcus agalactiae* have also been implicated in PID (1,5). TOA involves inflammation of the adnexa, often characterized by pus-filled fallopian tubes and ovaries, and can lead to systemic infections and involvement of adjacent organs such as the intestines or bladder (1,2,3,4). Common symptoms include fever, lower abdominal pain, foul-smelling vaginal discharge, pain during or after intercourse, intermenstrual or postcoital bleeding, nausea, vomiting, chills, and lower back pain (1,3,4). Diagnosis relies on detailed medical history, clinical examination, and diagnostic tools like transvaginal ultrasound, laparoscopy (gold standard), and MRI. Delayed diagnosis or treatment is associated with long-term complications and poorer outcomes. We present a case of a young woman with a large TOA successfully treated with a combination of antibiotic therapy and surgical intervention (1,2,3,5).

Case Presentation:
A 35-year-old woman presented to the emergency department at the Dr. Dragiša Mišović University Clinical Center's Department of Gynecology and Obstetrics with lower abdominal pain and fever up to 38°C. The pain was constant, mild and had persisted for seven days. She reported vaginal bleeding with dark menstrual blood starting the previous day. She denied chronic illnesses and previous surgeries. Upon examination, the patient appeared visibly exhausted, febrile and tachycardic. Abdomi-

nal palpation revealed diffuse tenderness in the lower abdomen. Furthermore, on ultrasound examination the uterus was measured 49x65x9mm, the left ovary 64x62mm and the right ovary 85x54mm, revealing fixed adnexal masses bilaterally, each approximately the size of a clenched fist, consistent with bilateral TOA. A vaginal swab and urine culture were performed, and no pathogenic bacteria were detected on the results. Laboratory tests showed elevated inflammatory markers: leukocytosis (up to 16.8) and C-reactive protein (CRP) at 276. Empirical intravenous antibiotic therapy was initiated using Ceftriaxone (Azaran) 2g, Metronidazole 500mg/8h, and Gentamicin 120mg/12h. Due to persistent clinical symptoms, lack of improvement in the patient's condition and the size of the process, it was decided to perform a laparoscopic revision. During laparoscopy, bilaterally enlarged and adherent ovaries with extensive fibrin deposits were observed, and the ovaries could not be visualized. A small amount of purulent fluid was found in the cul-de-sac (Douglas pouch) and vesicouterine space. Abscess drainage, adhesion lysis, bilateral ovary mobilization, and bilateral salpingectomy were performed. A significant amount of purulent content was evacuated and sent for microbiological analysis, which later showed the presence of the bacterium *Chlamydia trachomatis, E.coli* and *Peptostreptococcus*. Following surgery, antibiotic therapy with Ceftriaxone, Metronidazole, and Gentamicin was continued. However, due to rising CRP levels (94.7 pre-op, 133.4 on post-op day 1, and 145.7 on day 2), Gentamicin was replaced with Clindamycin 600mg on post-op day 2. By the following day, the patient became afebrile, and CRP dropped to 92.4, with continued normalization of lab results in the following days. The patient was discharged on the fifth day after surgery in good general condition, with clean and dry laparoscopic wounds and prescribed oral antibiotic therapy. At follow-up, CRP values had decreased to 7.8, and the patient was not febrile with proper wound healing.

Discussion:

The diagnosis of PID is primarily clinical. It should be considered in any sexually active young woman presenting with pelvic or lower abdominal pain and tenderness during examination (2,3,4,5). While laboratory tests can aid diagnosis, nucleic acid amplified testing can take hours to days, and negative results do not exclude PID. Treatment should be initiated early based on clinical suspicion (2,3,5). The inefficacy of antibiotic therapy in this case can be attributed to the delayed initiation of treatment, as the patient sought medical care only after seven days of persistent symptoms. Laparoscopy allows for precise PID diagnosis and microbiological sampling. It becomes essential when diagnosis remains unclear after initial tests or when antibiotics fail (1, 2). Delayed diagnosis and treatment of PID can lead to TOA and increased morbidity. Mismanagement or missed TOA in outpatient settings can result in abscess rupture and the need for extensive abdominal surgery (1,2,3,5). Laparoscopy is especially useful when other diagnostic tools are inconclusive, and in emergency surgical situations like appendicitis, which can mimic PID (1,2). Laparoscopic treatment of TOA is a minimally invasive surgical approach used for both diagnosis and therapy. It is indicated when there's lack of improvement after 48–72 hours of antibiotic treatment, a ruptured abscess, diagnostic uncertainty, recurrent TOA or fertility preservation as a therapeutic goal (1,2). Laparoscopy allows for abscess drainage, adhesion lysis, necrotic tissue debridement, and sample collection for culture and histology to rule out tuberculosis or malignancy. Its advantages include less pain after surgery, faster recovery, better visualization of pelvic structures, and reduced risk of adhesions compared to open surgery. However, risks include abscess rupture during manipulation (leading to peritonitis or sepsis), conversion to laparotomy in complicated cases, and injury to adjacent structures like intestines, bladder, or ureters (1,2). Delayed diagnosis or treatment of PID is strongly associated with long-term complications and poor outcomes (1,2,3,4,5). Chronic pelvic pain occurs in up to one-third of women with PID, usually caused by inflammation, scarring, and adhesions (1,2,3,4). The most significant predictor of chronic pain is recurrent PID. Infertility may develop even in asymptomatic PID cases due to tubal damage and obstruction, especially when caused by *Chlamydia trachomatis*, with delayed treatment or repeated infections (1,2,5). PID also increases the risk of ectopic pregnancy due to tubal damage (1,2,5).

Conclusion:

Early diagnosis and timely treatment are crucial for the successful management of TOA. A multidisciplinary approach enables optimal decision-making regarding indications for antibiotic therapy or surgical intervention. Prompt recognition of symptoms and appropriate treatment reduce the risk of complications, shorten hospital stay, and improve overall patient outcomes. Laparoscopy remains the gold standard for both the diagnosis and treatment of PID, allowing precise evaluation of the extent of the disease and minimally invasive management when surgical intervention is necessary.

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34 PREVALENCE OF BACTERIAL VAGINOSIS IN PREGNANT WOMEN WITH VULVOVAGINAL CANDIDIASIS

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Introduction
Bacterial vaginosis (BV) is a disorder of vaginal flora characterized by reduced or absent lactobacilli and an increased number of anaerobic bacteria. Vulvovaginal candidiasis (VVC) is a set of inflammatory symptoms caused by *Candida* species. The relationship between BV and VVC is still not fully clarified.

The Aim
The aim of this study was to determine the prevalence of BV among pregnant women with vulvovaginal candidiasis.

Materials and methods
The study included 350 pregnant women in the 36th week of gestation. Vaginal swabs were collected during preparation for delivery in 2025 at University Clinical Center "Dr Dragiša Mišović." Samples were analyzed bacteriologically and mycologically. Vaginal flora was characterized using Nugent's method, while identification of *Candida* species was performed on CHROM agar.

Results
Candida spp. were isolated in 35% of women, while BV was diagnosed in 21% of women. Coinfection of BV and VVC was found in 4.5% of cases. Among all *Candida* isolates, 76% were *C. albicans*, and the rest were atypical *Candida* species.

Conclusio
BV represents an important risk factor for the development of VVC. The dominant pathogen among pregnant women was *C. albicans*. Further studies are necessary to analyze the impact of risk factors on the development of BV and VVC during pregnancy.

Key words: bacterial vaginosis, vulvovaginal candidiasis, pregnant women, *Candida spp.*

Introduction
Bacterial vaginosis (BV) represents a disturbance of the vaginal flora, with a reduced number or complete absence of lactobacilli and a significant increase in anaerobic bacteria. BV is most often asymptomatic, while in about 30% of women symptoms may occur, which are caused by elevated pH and amines, metabolic products of anaerobic bacteria. Symptoms include increased vaginal discharge of unpleasant odor, similar to the smell of spoiled fish, hyperemia and irritation of the vaginal mucosa, and most symptoms worsen after sexual intercourse (1). BV increases the risk of acquiring sexually transmitted infections, such as infection with human immunodeficiency virus (HIV), herpes simplex virus (HSV), Chlamydia trachomatis, Neisseria gonorrhoeae and Trichomonas vaginalis. Also, BV increases the risk of pelvic inflammatory disease, infections in the last trimester of pregnancy, following the use of intrauterine instruments, and hysterectomy. Severe complications in pregnancy, such as rupture of fetal membranes, preterm birth and postpartum endometritis, are more frequent in women with BV (2).
The composition of the physiological microflora of the lower genital tract of women greatly depends on hormonal status, primarily the level of estrogen, and during the reproductive period it is predominantly composed of bacteria of the genus Lactobacillus. By maintaining low pH due to lactic acid production, generating antimicrobial substances (H_2O_2), and competing for nutrients and binding sites on vaginal epithelial cells, lactobacilli prevent colonization of the vaginal mucosa by pathogenic

bacteria (3). It is believed that the development of BV occurs precisely due to changes in the microecology of the lower genital tract of women, so that microorganisms which are present in small numbers during the reproductive period in the vagina become predominant relative to lactobacilli. In the secretions of women with BV, there are anaerobic cocci, species of the genera Bacteroides and Porphyromonas, Eubacterium, Gardnerella vaginalis, Mobiluncus spp. and Mycoplasma hominis. Although this group of bacteria represents a synergistic mixture typical for BV, it is still unknown which individual member of this group is responsible for the development of BV (3).

Vulvovaginal candidiasis (VVC) represents a set of inflammatory symptoms caused by species of the genus Candida, predominantly C. albicans (4). It manifests as erythema of the vulvar and vaginal mucosa, profuse cottage cheese-like discharge, and itching. VVK is one of the most common causes of vaginitis and it is estimated that about 75% of women in their lifetime have had at least one episode of VVK. It has been shown that VVK occurs more frequently in pregnant women, after antibiotic therapy, in individuals with diabetes, and HIV-positive women (4).

Bacterial vaginosis (BV) and vulvovaginal candidiasis (VVK) represent the two most common forms of vaginal dysbiosis, and the causal-consequential relationship between these two dysbioses has not yet been fully clarified. BV is characterized by the reduction in number of lactobacilli and the increase in anaerobic bacteria, which leads to elevated vaginal pH and disruption of microbiological balance. By contrast, VVK is a fungal infection most often caused by Candida albicans, which can be part of the normal flora, but may proliferate excessively under favorable conditions.

Although the factors leading to the occurrence of BV and VVK are different, numerous studies indicate that BV treatment with antibiotics often leads to the development of VVK as an undesirable effect, due to the reduction of competition from lactobacilli which normally have antimycotic properties. Also, women with intermediate vaginal flora, which precedes the development of BV, more often have episodes of VVK.

There are different views in the scientific community on the nature of the relationship between BV and VVK. While some believe that these are two independent processes with different causative agents and mechanisms, others point out that BV may create conditions favorable to the growth of Candida fungi by increasing pH and reducing lactobacilli. In addition, the interaction of bacterial and fungal biofilm may contribute to chronicity and resistance to therapy (5).

The aim of this study is to determine the prevalence of BV in pregnant women with vulvovaginal candidiasis at 36 weeks of pregnancy.

Materials and Methods

The study was conducted at Clinical Center "Dr Dragiša Mišović" during 2025. A total of 350 pregnant women at 36 weeks of gestation were included, from whom vaginal swabs were taken as part of the preparation for childbirth. Pregnant women who had not used antibiotics or antifungal medications in the 14 days prior to sample collection were included in the study. Women with diagnosed other acute vaginal or systemic infections, with chronic diseases that could affect immune status and the vaginal microbiota (such as diabetes mellitus and autoimmune diseases), as well as pregnant women with a history of surgical interventions on the genital tract during that pregnancy, were excluded from the study.

Each participant had two vaginal swabs taken – one for bacteriological and one for mycological examination. Direct preparations stained by Gram were interpreted using the Nugent method. Mycological examination was performed by inoculation on Sabouraud dextrose agar, and species identification of the genus Candida was performed based on morphological characteristics and colony color on CHROM agar.

Statistical analysis was performed using SPSS version 26. The association between the presence of BV and VVK was tested using the chi-square test. Values of $p < 0.05$ were considered statistically significant.

Results

Out of a total of 350 pregnant women, Candida spp. was isolated in 123 (35%), BV was diagnosed in 74 (21%), and co-infection of BV and VVK was found in 16 (4.5%) women (Table 1). Among the isolated Candida spp., 76% belonged to C. albicans, while the other isolates belonged to atypical (non-albicans) species.

Analysis of the association between BV and VVK showed that the frequency of candidiasis was significantly higher in women with BV compared to those without BV ($p < 0.05$). This indicates a statistically significant association between the two vaginal flora disturbances.

Discussion

The results of this study showed that BV and VVK are relatively common disturbances of vaginal flora in pregnant women in the third trimester. Candida spp. isolation was recorded in 35% of pregnant women, while BV was diagnosed in 21%. Particu-

larly noteworthy is the finding of co-infection (4.5%), and the fact that the chi-square test yielded a statistically significant association between BV and VVK ($p < 0.05$). This means that women with BV have higher probability of developing vulvovaginal candidiasis compared to women with normal vaginal flora.

This result is consistent with earlier studies by Sobel et al. (5), who showed that disturbance of the vaginal microbiota and reduction in the number of lactobacilli favors colonization by Candida spp. McClelland et al. (6) and co-workers indicated that the floral composition characteristic of BV plays a greater role in the predisposition to VVK compared to normal flora. Our results confirm this hypothesis and further emphasize the importance of monitoring vaginal flora during pregnancy.

The dominant pathogen of VVK was C. albicans (76%), which is expected given that this species globally represents the most frequently isolated strain. In fewer cases, atypical species (non-albicans Candida) were isolated, which may be related to increasingly common use of antifungal agents in the general population and changes in resistance patterns.

The results obtained have clinical significance as they indicate that BV should not be seen solely as a separate disorder, but also as a potential risk factor for the development of VVK. Given that infections in pregnancy may be associated with preterm birth and postpartum complications, regular screening and timely treatment of these conditions may contribute to a better pregnancy outcome.

Conclusion

The most common cause of vulvovaginal candidiasis was C. albicans (76%). BV represents a significant risk factor for the development of VVK in pregnancy. More comprehensive research is needed to more precisely determine the influence of risk factors on the occurrence of these infections in pregnant women.

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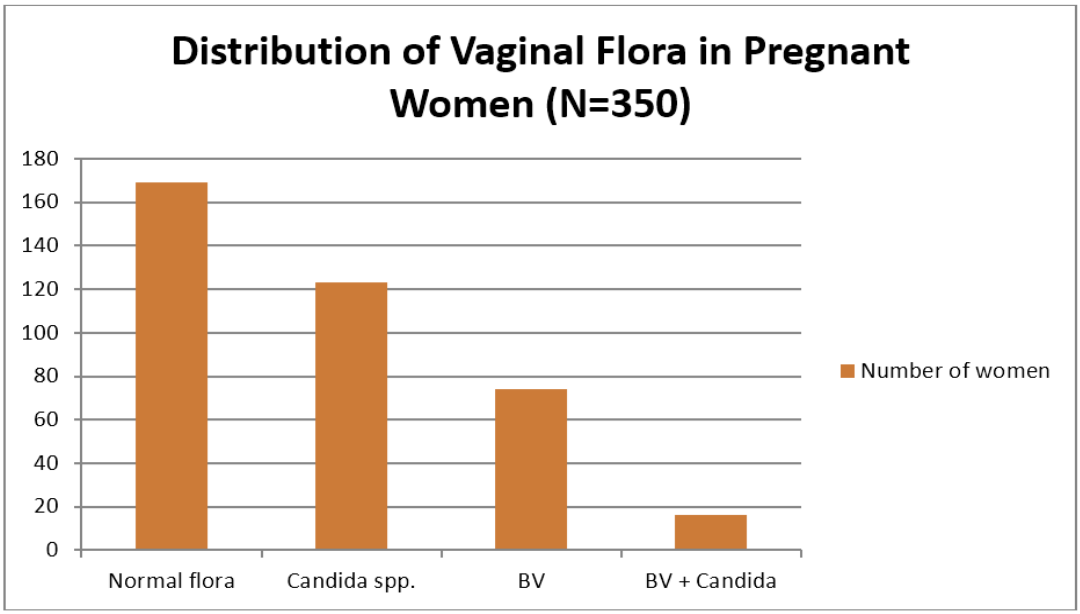

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ACCURACY OF 2 PCR TESTS FOR DETECTION OF PRESENCE OF VAGINAL CANDIDA IN PATIENTS TREATED FOR VULVOVAGINAL CANDIDA INFECTION

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Introduction
In order to treat accurately for Candida vulvovaginitis (VVC), a proper diagnosis of the presence of Candida sp is crucial. During a study testing domiphen bromide enhanced miconazole cream in women with VVC, we compared 2 different PCR tests with cultures on vaginal swabs.

Methods
A total of 485 vaginal swabs of 102 patients with clinical vulvovaginal candida (VVC) infection treated with standard treatment of 2% miconazole cream (MCZ) or MCZ creme fortified with Domiphen Bromide (DB) were tested with culture, and 2 different PCR tests (Seegene and Sacace). Test accuracy of both PCR test versus culture and compared to any of the 3 tests being positive were compared. Test accuracy compared to culture was estimated by sensitivity, specificity and diagnostic odds ration testing (DOR). Superiority of any of the 3 tests were compared by analysing the area under the curve (AUC) in the respective ROC curves displaying sensitivity versus 1- specificity.

Results
Two swabs in the Segeene cohort and one in the Sacace cohort could not be analyszed due to technical reasons (0.2%). Strikingly, sensitivity of Sacace tests were higher than of Segeene tests (98% vs 80%). This reflected a seemingly higher specificity of the Seegene test (89%) vs the Acace test (74%), but calculation of the diagnostic odds ratios of both tests indicated a 3 fold higher test accuracy for the Acace test than the Segeene test, probably because of a higher sensitivity as compared to cultures of the former, but not the latter. This was strongly confirmed by ROC analysis, shwing the aera under the curve of the Aace test was significantly higher (0.99 CI 95% 0.98-1.00) than for the Seegene test (0.84(0.80-0.87),or the culture (0.79-0.86).

Discussion
PCR by the Acace test is by far a superior test to diagnose the presence of Candida in VVC patients, with or without treatment. The Seegene PCR showed 20% false negative compared to culter, while the Acace test is significantly more sensitive for Candida detection than culture. Acace PCR is superior to Seegene PCR as a confirmation test for VVC.

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EVALUATION OF FACTORS ASSOCIATED WITH POSTPARTUM INFECTIONS IN 2024 AT THE CLINIC OF GYNECOLOGY AND OBSTETRICS, UNIVERSITY CLINICAL CENTER OF THE REPUBLIC OF SRPSKA

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Objective: Postpartum infections remain an important cause of maternal morbidity and mortality despite modern preventive protocols. The aim of this study was to determine the incidence, risk factors, and most common pathogens associated with postpartum infections among women who delivered vaginally or by cesarean section.

Methods: A retrospective analysis was conducted of 3,190 deliveries at the Clinic for Gynecology and Obstetrics, University Clinical Center of the Republic of Srpska, during 2024. Parameters including maternal age, parity, body mass index (BMI), duration of labor, premature rupture of membranes (PROM), group B streptococcus (GBS) status, mode of delivery, and microbiological findings were evaluated.

Results: The incidence of postpartum infections was 0.78% (n=25). After vaginal delivery, infections were recorded in 0.57% of cases (n=12), while the incidence after cesarean section was higher, at 1.17% (n=13). The most frequently isolated pathogens were *Escherichia coli*, *Staphylococcus aureus*, and *Enterococcus spp.*. The main risk factors identified were elevated BMI, primiparity, and emergency cesarean section. The average onset of symptoms occurred between the third and tenth postpartum day, accompanied by markedly elevated inflammatory markers.

Conclusion: Postpartum infections are more frequent after cesarean section compared to vaginal delivery. Early recognition of symptoms, timely antibiotic therapy, and improvements in hygienic standards are essential for reducing their incidence. Continuous education of healthcare professionals and women remains central to prevention and management. A limitation of this study is that only patients with prolonged or repeated hospitalization due to puerperal infection were included in the analysis.

37 CASE REPORT: CYTOMEGALOVIRUS INFECTION IN PREGNANCY – DIAGNOSTIC AND THERAPEUTIC DILEMMAS

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Introduction

Human cytomegalovirus (CMV) is the leading cause of congenital infection worldwide and is also the most common cause of non-genetic sensorineural hearing loss (SNHL). It can be the cause of other serious clinical manifestations such as intellectual disability, learning difficulties and other systemic findings, leading to permanent disability in infected children (1). Unlike most other TORCH infections, both primary and non-primary CMV infection can affect fetus (2).
The aim of this report is to present a case of cytomegalovirus infection diagnosed in 35. weeks of pregnancy.

Case presentation

A 27-years old woman gravida 1 para 1 was referred to our hospital with pregnancy complicated by severe intrauterine growth restriction and fetal brain anomalies seen on the ultrasound and magnetic resonance imaging (MRI). She was 35 weeks pregnant. That was her second pregnancy. The first one was uneventful. She reported the history of chronic hypertension and was taking Methyl dopa 250mg twice a day and Verapamil 80mg three times a day.
On the transabdominal ultrasound we confirmed symmetrical intrauterine growth restriction. Estimated fetal weight was 1660g (less than 1%). Amniotic fluid index was within normal ranges. *Doppler assessment of the placental and fetal circulation showed normal values. Ultrasound revealed the presence of mild ventriculomegaly, with dilated occipital and temporal horns of lateral ventricles with normal frontal horns. Other anatomy of the fetus was normal (Figure 1).*

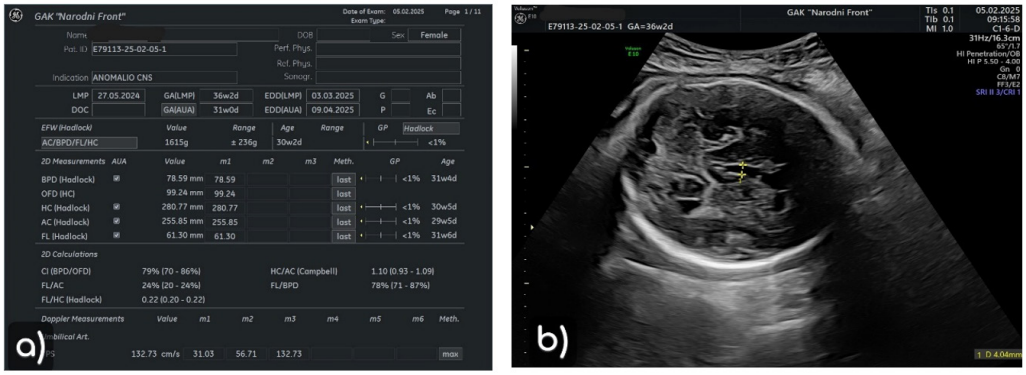

Figure 1. Sonographic features: a) intrauterine growth restriction; b) mild ventriculomegaly; c) dilated temporal horns of lateral ventricles; d) intraventricular septations in occipital horns od lateral ventricles

MRI examination of the fetal brain indicated smaller diameters of the cerebral hemispheres for the gestational age, with simplified gyration and a highly suspected band heterotopia (differential diagnosis: lissencephaly). Ventriculomegaly was described as mild, with dilated temporal horns of lateral ventricles, diameters 12mm on the left side and 11mm on the right side with white matter rarefaction, especially on the left side. Occipital horns were dilatated with intraventricular septations. There were zones of t2 hyperintense lesions, predominantly in temporal horns. Those changes were described as suspicious for sequelae of an infectious or metabolic disorder (Figure 2.)

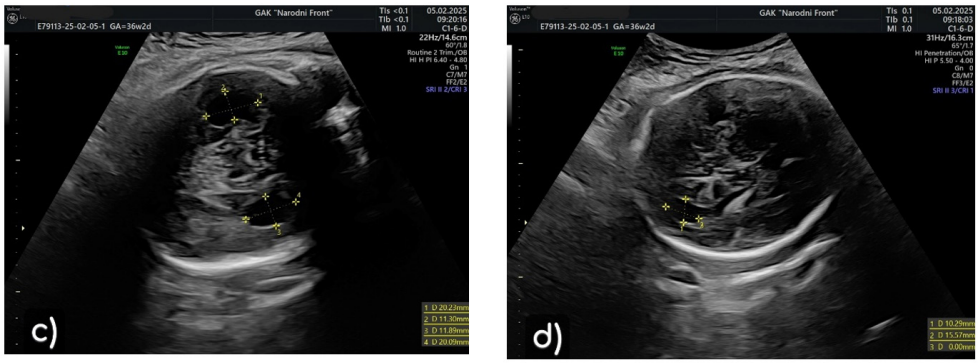

Figure 2. MRI of fetal brain: a) simplified gyral pattern with mild ventriculomegaly, b) dilated occipital horns of lateral ventricles with intraventricular septations, c) dilated temporal horns of lateral ventricles with white matter rarefaction

The tests for blood count, blood group and biochemistry showed results within the reference range. Screening for preeclampsia showed low risk (sFlt-1/PlGF rat 28,88%).
The results of TORCH test were: no detected Toxoplasmosis specific IgM or IgG antibodies; no detected Rubella specific IgM antibodies, positive result for Rubella specific IgG antibodies; positive result for CMV specific IgM antibodies and positive result for CMV specific IgG antibodies with high avidity (91,7%) (Table 1).

	Result	Ref values	Unit of measurement
CMV IgM	1.12	Non-reactive <0.85 Reactive >1.00	Index
CMV IgG	1102.4	Non-reactive <6.0 Reactive >6.0	U/ml
CMV Av	91.7	Low avidity <50.0 Grey zone 50.0-59.9 High avidity >60.0	%

Table 1. Serology for cytomegalovirus (CMV) infection

Given the ultrasound-diagnosed severe intrauterine growth restriction, the presence of CNS anomalies, as well as suspicious CMV serology, it was decided to perform a diagnostic amniocentesis. The result of diagnostic quantitative fluorescent-polymerase chain reaction (QF-PCR) was normal (rsa(X,13,18,21)x2). Microarray test showed normal molecular karyotype (arr(X,1-22)x2). Polymerase chain reaction (PCR) for diagnosing CMV infection was positive (92750 copies/ml).
The diagnosis was congenital cytomegalovirus infection with severely symptomatic fetus. The patient was informed at the Fetal anomalies committee about the poor prognosis of the congenital CMV infection, especially with those findings on the fetal brain. She opted for the termination of pregnancy.
Fetus and placenta were sent to an autopsy. The results have not been done yet.

Discussion

Congenital CMV infection affects 0.48% of all live born infants in high-income countries and 1.42% in low- and middle-income countries and is responsible for significant morbidity, especially in infants who are symptomatic in the neonatal period (3). The rate of transmission to the fetus during primary CMV infections is 30%–40% and 1-2% during non-primary infection (1,3). The risk of sequelae is the greatest following maternal primary infection in the periconception period and first trimester (3,4). Maternal serology is used for the diagnosis of primary maternal infection. The diagnosis of primary CMV infection in pregnancy

can be made by the appearance of CMV-specific IgG in a woman who was previously seronegative or by the detection of CMV IgM antibody with low IgG avidity – indicating recent primary infection. Diagnosis of non-primary CMV infection is not possible using serology (3).

In spite of the high morbidity that may follow the CMV infection, routine screening is not recommended. Some guidelines recommend offering pre-pregnancy or early pregnancy screening for women who are at high risk of infection. Those are the women who have young children at home or work in childcare, since children under three years old have prolonged secretion of the virus in their saliva and urine . One of the reasons for not screening is that we can't predict the risk of fetal infection and, when we prove fetal infection, we can't predict the magnitude of fetal/neonatal impairment. Also half of the congenital CMV infections happen following non-primary infection which means that routine screening would miss half cases. Next reason is that we still don't have approved therapy that can prevent congenital infection (2).

For the last few years, many clinical trials were conducted in order to find the therapy for the secondary prevention of CMV congenital infection or at least serious postnatal sequelae. The older studies did not confirm the efficacy of use of hyperimmune globuline in prevention of congenital infection (5). New studies on the impact of high dose valacyclovir on the outcomes of cytomegalovirus infection in pregnancy have promising results (6). The initiation of therapy soon after the diagnose of maternal primary infection in the first trimester can lower the risk of vertical transmission. More evidence from larger randomised series is needed for introducing this agent into clinical practice. If the efficacy of valacyclovir is proven, it will be necessary to revise the positions related to screening. Namely, most women have asymptomatic CMV infection, which means that the majority will not benefit from antiviral therapy.

Infected fetuses may be classified into one of three prognostic categories: asymptomatic, mild or moderately symptomatic and severely symptomatic. Asymptomatic fetus has no visible anomalies, has risk of hearing loss, but generally has good prognosis. Mild or moderately symptomatic fetus has anomalies like hyperechogenic bowel, mild ventriculomegaly or isolated calcifications. The prognosis is uncertain and need ultrasound or MRI follow up to define the prognosis. Severely symptomatic fetus has severe brain anomalies: microcephaly, ventriculomegaly, white matter anomalies and cavitations, intracerebral haemorrhage, delayed cortical development. The prognosis is poor (3).

In our case, the patient was admitted to our hospital in the third trimester of pregnancy with severely symptomatic fetus. Based on the serologic findings and the time of the diagnosis, we could not tell if it is a primary or non-primary infection. Since there are no national recommendations on routine TORCH screening, the diagnosis was established following the detection of abnormalities on ultrasound. Even if we knew about maternal acute infection, we could only close monitor the pregnancy, since we do not have national recommendations on the prevention of the vertical transmission. Described central nervous system anomalies are the sign of poor prognosis, so the patient was counselled regarding the option of termination of pregnancy.

Conclusion

All pregnant women should be given information about CMV infection and its impact on the fetus and neonatus. They should be informed about the measures of primary prevention. Research related to preventive therapy should be supported. National screening recommendations need to be kept under review as new evidence emerges in order that the timely diagnosis and therefore treatment, can be initiated.

Our national guideline doesn't recommend universal screening for congenital infections or the use of therapy for the prevention of CMV vertical transmission. New guideline is to be prepared, so we are waiting to see if there is something promising.

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38 A SURVEY OF THE DYNAMIC CHANGES OF VAGINAL MICROECOLOGY DURING PREGNANCY AND ITS CORRELATION WITH PREGNANCY OUTCOME

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Objective: To study the longitudinal changes of vaginal microecology at different stages of female pregnancy, so as to understand the composition of vaginal microflora in different stages of pregnancy, and to find the changes of vaginal microflora and function related to adverse pregnancy outcomes, so as to provide basis for the prediction and prevention of premature rupture of membranes.

Methods: Vaginal microecology was detected in 282 pregnant women and 640 non-pregnant women who underwent physical examination during the same period. The differences of vaginal microecology between non-pregnant women and pregnant women, the characteristics of longitudinal changes of vaginal microecology in pregnant women, and the correlation between different vaginal microecology and pregnancy outcome were analyzed. Metagenomic sequencing technology were performed on vaginal microflora at different stages in 120 non-pregnant women, 60 healthy women giving birth at full term and 60 women with premature rupture of membranes, to analyze the differences of vaginal microflora at different stages between non-pregnant women and pregnant women, the characteristics of longitudinal changes of vaginal microflora in pregnant women, and to analyze the characteristic microflora changes of premature rupture of membranes.

Results: 1. Compared with the non-pregnant group, the proportion of vaginitis and microecological disorders in the pregnant group was lower (15.48% vs. 22.50%, 8.05% vs. 13.91%). 2. Compared with the non-pregnant group, the incidence of bacterial vaginosis (BV) was lower in the pregnant group (8.98% vs. 14.06%). 3. 74.82% (211/282) of women in the first trimester had normal vaginal microecology, among which 16.59% (35/211) showed abnormal vaginal microecology during the second and/or third trimester. In 25.18% (71/282) of the pregnant women diagnosed with microecologic abnormalities in the first trimester, only 29.58% (21/71) of the pregnant women were diagnosed with vaginal microecologic abnormalities in the second and third trimesters, and the rest were diagnosed with vaginitis again. 4. The incidence of premature rupture of membranes increased in the patients diagnosed with BV in early pregnancy (16.25% vs. 6.44). 5. 6. Compared with the healthy full-term delivery group, the relative abundance of *Lactobacillus crispatus* vaginalis in premature rupture of membranes was decreased, while the relative abundance of *Lactobacillus iners*, *Gardnerella vaginalis*, and *Atopobium vaginae* was increased.

Discussion: The vaginal microecology of women during pregnancy is mainly normal and relatively stable. The relative abundance of *Lactobacillus crispatus* in healthy full-term delivery is higher, and the vaginal flora is more stable. Only a small number of vaginal microecological abnormalities in early pregnancy can return to normal naturally in the middle and third trimester. The incidence of premature rupture of membranes in BV patients in early pregnancy is significantly increased. The relative abundance of *Gardnerella vaginalis* and *Lactobacillus iners* is increased in patients with premature rupture of membranes, while the relative abundance of *Lactobacillus crispatus* decreased. Therefore, attention should be paid to early detection of vaginitis.

39 *STREPTOCOCUS ANGINOSUS* PROMOTES ADVERSE PREGNANCY OUTCOMES BY INFLAMMATION

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Introduction
Aerobic vaginitis (AV) is one of the main causes of gynaecology and obstetrics morbidity. Vaginal microbiota dysbiosis plays key roles in vaginitis and adverse pregnancy outcomes. While the roles and underlying mechanisms in adverse pregnancy outcomes caused by AV have not been fully elucidated. The aim of this study was to investigate the possible profiles of vaginal microbiome and adverse pregnancy outcomes of AV patients in the third trimester.

Patients and methods
Vaginal microbial compositions were examined in 57 AV patients and 57 healthy women in the third trimester. After DNA extraction and purification, and metagenomic sequencing were performed on vaginal discharge of the two groups. Placenta and fetal membrane tissue during cesarean section were collected for HE staning, IHC, and IF. Then, *streptococcus anginosus* transplantation experiments in SD rats were conducted to explore the roles and mechanisms of AV and the relationship with adverse pregnancy outcomes[1, 2]. Descriptive statistics were used to study the difference in clinical and microbial profiles of AV in the third trimester.

Results
Our study found that patients with AV showed increased bacterial diversity and vaginal microbiota dysbiosis. Opportunistic pathogens, particularly *S. anginosus*, *Escherichia coli*, and *Staphylococcus aureus*, were enriched, whereas beneficial bacteria, including *Lactobacillus* spp., were markedly depleted in the AV patients. Mechanically, TLR2/4/NF-kB/IL-4+IFN-k signaling pathway in placenta and fetal membrane tissue were significantly upregulated, thereby promoted the inflammatory cell infiltration. The key pathogen of AV was *S. anginosus*. *S. anginosus* significantly aggravate the adverse pregnancy outcome of AV pregnant rats, such as abortion, maternal gestational weight decrease, and delayed fetus/placenta developmental. Moreover, AV rats manifested enhanced TLR2/4/NF-kB/TNF-k+IL-1k signaling pathway, thereby promoted the neutrophil infiltration in placenta and the adverse pregnancy outcomes.

Conclusion
Our study revealed that the vaginal microbiota dysbiosis was found in AV patients, and the key pathogen- *S. anginosus* of AV are an important etiology of adverse pregnancy outcomes.

Key words: Aerobic vaginitis; Inflammation; Vaginal Microbiome; Metagenomics; *Streptoccus anginosus*

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40 LIPSCHÜTZ ULCERS IN PREGNANCY

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Introduction Lipschütz ulcers (LU) are rare genital ulcers that typically occur after flu-like symptoms. They usually present in young, sexually inactive patients. LU has an acute onset and is most often confined to the labia minora, but may also affect the labia majora, perineum, or lower vagina, either unilaterally or bilaterally ("kissing ulcers"). They appear as necrotic ulcers with an erythematous border, causing significant pain, but generally heal spontaneously within a few weeks. Treatment is mainly supportive, focusing on pain management. Their occurrence during pregnancy has not been previously documented.

Methods Between 2000 and 2024, the Emergency Gynecology Department (EGD) at the University Medical Centre Ljubljana evaluated 165 patients with acute vulvar ulcers. Among these, 10 were diagnosed with LU, and 16 others had similar clinical presentations. Here, we report a case of LU in pregnancy.

Case presentation A 32-year-old pregnant woman at 15 weeks of gestation was referred to the EGD due to painful vulvar sores (Figure 1). Gynecological examination revealed three ulcers on both labia minora, the largest measuring 1 cm. Serological testing for Epstein–Barr virus (EBV) (IgM anti-VCA, IgG anti-VCA, IgG anti-EBNA, and IgG anti-EA), syphilis, and cytomegalovirus (CMV) (IgG and IgM) was performed. In addition, swabs for HSV types 1 and 2 were collected from the ulcers. Results showed negative serology for CMV and syphilis. Positive IgG for EBV indicated a previous infection. HSV-1 and HSV-2 swabs were also negative. The ulcers healed spontaneously within two weeks. The patient later delivered a healthy baby at term.

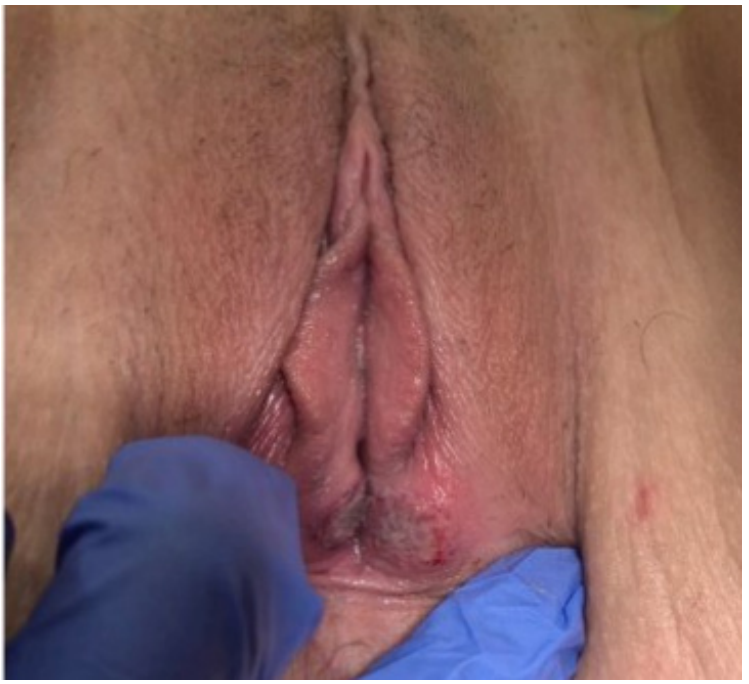

Fig. 1. Lipschütz ulcers

Discussion

To our knowledge, LU in pregnancy has not been previously reported. Pregnancy itself may exacerbate the condition due to immunological changes. The exact pathogenesis of LU remains unclear, but one hypothesis suggests a hypersensitivity reaction causing small vessel thrombosis in the vulva. LU may also occur in case of impaired immunity or exaggerated responses to infection. EBV is the most commonly related infectious agent, but cases have also been linked to influenza, CMV, HSV 1–2 (serological positivity), parvovirus B19, paramyxovirus, HIV, and SARS-CoV-2. LU has also been described following bacterial infections and in association with non-infectious causes such as Behçet's disease. Misinterpreted cases of LU in pregnancy may lead to overtreatment. Our case highlights the importance of recognizing LU as a self-limiting condition, even in pregnancy.

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41 LISTERIOSIS DURING PREGNANCY – A CASE REPORT OF VERTICAL TRANSMISSION OF INFECTION TO THE FETUS

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Although a rare infection, listeriosis is up to 20 times more common in pregnant women than in the general population. Listeriosis during pregnancy may be asymptomatic or present with mild maternal symptoms, most commonly fever and flu-like symptoms. The causative bacillus, *Listeria monocytogenes*, has the ability to cross the placental barrier and can lead to both early- and late-onset neonatal infections. Listeriosis is a serious foodborne illness during pregnancy that can result in miscarriage, stillbirth, preterm birth, fetal death, or lifelong health complications for the infant.
Early-onset neonatal infection, which most often occurs intrapartum, typically presents as sepsis with a high mortality rate of approximately 50%. Late-onset neonatal infection usually manifests between the 3rd and 4th week of life and may present as meningitis, sometimes sepsis, and more rarely, pneumonia or enteritis.
To prevent listeriosis, pregnant women should avoid high-risk foods such as unpasteurized dairy products, deli meats (unless reheated until steaming hot), pâté, and unwashed fruits and vegetables.

Case Report
A 34-year-old primigravida (J.D.) presented to the clinic at 37+4 weeks of gestation with labor-like contractions and rupture of amniotic membrane. She reported a sudden onset of fever earlier the same day, with a maximum temperature of 38.5°C, but without other accompanying symptoms. The pregnancy had been without any complications until that point. Vaginal and urinary cultures obtained during pregnancy were normal. Both her personal and family medical histories were without significant findings.
On the same day, labor was induced with oxytocin, and she delivered a live male baby with Apgar scores of 8 and 10. While the mother's postpartum course was continued by persistent low-grade fever but otherwise stable condition, the newborn developed acrocyanosis, weak crying, and fever within the first hour of life. Immediate laboratory and microbiological evaluation, along with continuous monitoring, were initiated.
Due to elevated inflammatory markers (WBC 18×10^9/L, Neutrophils 41%, Band forms 24%, CRP 33.2 mg/L, Procalcitonin 2.80 ng/mL), empirical dual antibiotic therapy was initiated (ampicillin and gentamicin). Fever persisted into the second day of life. Microbiological confirmation of neonatal sepsis was obtained through a positive blood culture for *Listeria monocytogenes*. The same pathogen was subsequently isolated from the mother's lochia swab.
After compliting the dual antibiotic therapy, both mother and newborn were discharged in stable condition for continued outpatient follow-up and home care.

Conclusion
Although pregnant patients with comorbidities are considered at higher risk for listeriosis, the majority of documented cases occur in otherwise healthy women. This highlights the importance of maintaining clinical suspicion for *Listeria monocytogenes* in pregnant women presenting with flu-like symptoms, even in the absence of risk factors. Diagnostic testing should be promptly conducted in such cases.
Prevention remains the most effective strategy for disease control. Therefore, reinforcing preventive measures—both among patients and healthcare providers—should be considered a public health priority.

42 CASE REPORT – HYPERBARIC OXYGEN THERAPY EFFECT ON EPISIOTOMY WOUND HEALING AFTER DEHISCENCE CAUSED BY E.COLI INFECTION

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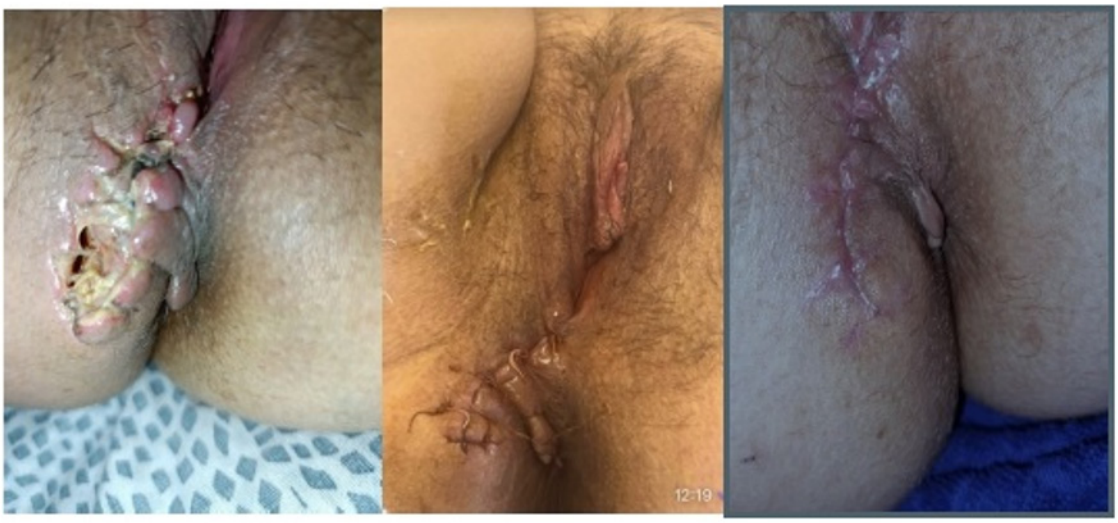
INTRODUCTION: Episiotomy is a surgical incision made on the perineum during the second phase of labor in order to widen the vaginal opening. It is performed to facilitate delivery. (1) Hyperbaric oxygen therapy consists of patient exposure to a 100% oxygen under elevated pressure. Pressure higher than 2 ATA has antimicrobial effects on aerobic and anaerobic bacteria and facultative anaerobes. Antimicrobal effects are achieved through ROS formation which lead to both protein and membrane lipid oxidation, bacterial DNA damage and bacterial metabolism impairment. HBO also enhances the antibacterial effects of some antibiotics. Through higher gradient of oxygen in the tissue, HBO promotes collagen matrix production. Collagen matrix is essential for angiogenesis and consecutive wound healing. (2–4) AIM: The aim of this study is to prove the positive effects of hyperbaric oxygen therapy on episiotomy wound healing after dehiscence caused by Escherichia coli infection.

CASE: Seven days after vaginal delivery, the patient came for check in complaining about oedema and hyperemia. Antibiotics had been prescribed and the wound was dressed on a daily basis, but nevertheless dehiscence occurred. A wound swab was obtained and the presence of E. coli was identified. Antibiotics were swapped based on antibiogram. After finishing antibiotic therapy and obtaining a negative wound swab, the wound was re-sutured in the operating room. Based on the advice of The medical advisory board for hyperbaric oxygen therapy, the patient was prescribed 25 sessions in the hyperbaric chamber on 2,3 ATM for 70 minutes every weekday. 16 therapy sessions were completed. On the final check-up, after completion of the therapy, the wound is clean, dry and is healing properly, with no signs of infection.



Picture 1. Picture 2. Picture 3.

Picture 1. Prior re-suturing
Picture 2. After re-suturing
Picture 3. After HBO therapy

CONCLUSION: Hyperbaric oxygen therapy seems to have a positive effect on episiotomy wound healing after dehiscence caused by Escherichia coli infection.

KEYWORDS: episiotomy, infection, HBO, E. coli, healing

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43 LYME DISEASE IN PREGNANCY – A CASE REPORT

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Introduction

Lyme disease is a multisystem infection caused by *Borrelia burgdorferi*, transmitted through the bite of ticks of the *Ixodes* genus. The clinical spectrum of the disease ranges from mild cutaneous manifestations to chronic neurological and cardiac complications. During pregnancy, the possibility of transplacental transmission of infection and its impact on fetal development, particularly regarding congenital anomalies and adverse perinatal outcomes, has been raised [1,5]. Although data in the literature are inconsistent, monitoring and adequate treatment of pregnant women with Lyme disease remain clinically significant [2].

Case report

A 30-year-old patient with a ten-year history of Lyme disease presented for a follow-up examination at 24 weeks of gestation due to an increase in IgG antibody titers against *Borrelia burgdorferi*, without clinical symptoms. During the sixth and seventh weeks of gestation, she received antibiotic therapy with amoxicillin [5] due to unknown serological and microbiological status, until evaluation by an infectious disease specialist, who subsequently monitored her monthly. At 24 weeks, an increase in IgG titers was recorded, again without clinical symptoms. Fetal ultrasound findings were normal, and because of the risk of congenital cardiac anomalies, fetal echocardiographic screening was performed, which showed normal cardiac morphology. A detailed expert ultrasound examination also revealed no deviations in fetal anatomy. The patient was started on a two-week course of oral amoxicillin, which was later discontinued despite her objections [3]. Follow-up serology showed stabilization of antibody titers.

The pregnancy ended with a spontaneous preterm vaginal delivery at 36 weeks of gestation. A female infant was born, weighing 2900 g, length 50 cm, with Apgar scores of 9 at one minute and 10 at five minutes, without signs of intrauterine infection or congenital malformations. The placenta was sent for histopathological examination, which showed no inflammation or signs of infection.

Discussion

Transplacental transmission of Lyme disease during pregnancy has been described, most often in the first trimester, but it may also occur later [1,5]. The risk of cardiac and neurological anomalies, intrauterine death, and preterm birth is especially considered in cases of untreated or active infection [2,4].

In the present case, the patient with chronic seropositivity showed a rise in antibody titers during pregnancy, which could suggest reactivation or nonspecific immunological modulation. Timely fetal echocardiographic screening enabled the exclusion of cardiac anomalies, and administration of amoxicillin most likely contributed to the favorable outcome [3]. Placental histopathology without inflammatory changes further supported the absence of intrauterine infection [4].

Conclusion

Pregnancy is a period of altered immune response in favor of fetal immunotolerance, characterized by a shift from Th1 to Th2 response. Fluctuations in antibody titers do not necessarily indicate reactivation of infection but may instead reflect stimulation of memory B cells. Prolonged antibiotic therapy during pregnancy for asymptomatic chronic Lyme disease is not justified; even short-term treatment based solely on antibody fluctuations is probably not warranted, although it may be considered

acceptable in such a sensitive population. Inappropriate use of antibiotics can have long-term consequences for both the fetus and the mother by altering the microbiota and influencing subsequent immune responses. Regular monitoring of serological parameters, fetal echocardiographic screening, and timely antibiotic therapy are key in preventing potential complications. The outcome of this pregnancy was favorable, with the birth of a healthy neonate and a histopathologically normal placenta [2,4].

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44 LISTERIOSIS IN PREGNANCY: DIAGNOSTIC CHALLENGES AND MATERNAL-FETAL RISKS

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Introduction

Listeriosis is an infection caused by the bacterium *Listeria monocytogenes*, most commonly transmitted through the consumption of contaminated food (1). The aim of this study is to present the specifics of diagnosing and treating listeriosis during pregnancy, as well as its impact on fetal well-being and pregnancy outcomes.

Patients

Our study describes two cases of pregnant women who were hospitalized at the Clinic for Gynecology and Obstetrics, University Clinical Center of Serbia, presenting with nonspecific symptoms that ultimately led to a diagnosis of listeriosis.

Results

We report two cases of systemic *Listeria monocytogenes* infection during pregnancy, illustrating the diverse clinical presentations. The first case involves a 28-year-old primigravida at 27 weeks of gestation who presented with sudden cessation of fetal movements, high fever reaching 39.5°C, cough, and abdominal pain. Laboratory tests revealed marked inflammation with elevated CRP, leukocytosis, and neutrophilia. She was diagnosed with chorioamnionitis and treated with broad-spectrum antibiotics. Despite therapy intrauterine fetal demise occurred. Blood cultures and lochia swabs later confirmed *Listeria monocytogenes* infection. The antibiotic regimen was adjusted accordingly, resulting in resolution of maternal infection and full recovery. The second case involves a 29-year-old multiparous woman at 37 weeks' gestation admitted with a 5-day history of high fever, malaise, nasal congestion, and myalgia. She had a prior cesarean section and a history of persistent hematuria. Initial serology confirmed Influenza A infection, but persistent symptoms and fetal monitoring revealed signs of fetal distress. An emergency cesarean section was performed, delivering a healthy infant. Postoperative uterine cultures identified *Listeria monocytogenes*, prompting adjustment of antibiotic therapy. Both mother and newborn recovered well, with no evidence of neonatal infection.

Discussion

Our cases underscore the importance of maintaining a high index of suspicion for *Listeria monocytogenes* infection in pregnant patients presenting with febrile illness, as early diagnosis and targeted treatment are crucial to prevent adverse maternal and fetal outcomes. Listeriosis during pregnancy poses a significant diagnostic challenge due to its nonspecific symptoms, which can often be mistaken for other infections such as gastrointestinal or urinary tract infections, or influenza (2). Although the incidence of listeriosis in pregnant women is estimated to be higher than in the general population, many pregnant women do not receive timely diagnoses (2). Early treatment can significantly reduce the risk of complications such as intrauterine death, preterm birth, and neonatal meningitis (2). Prevention remains key, including educating pregnant women about food safety and proper food preparation (3).

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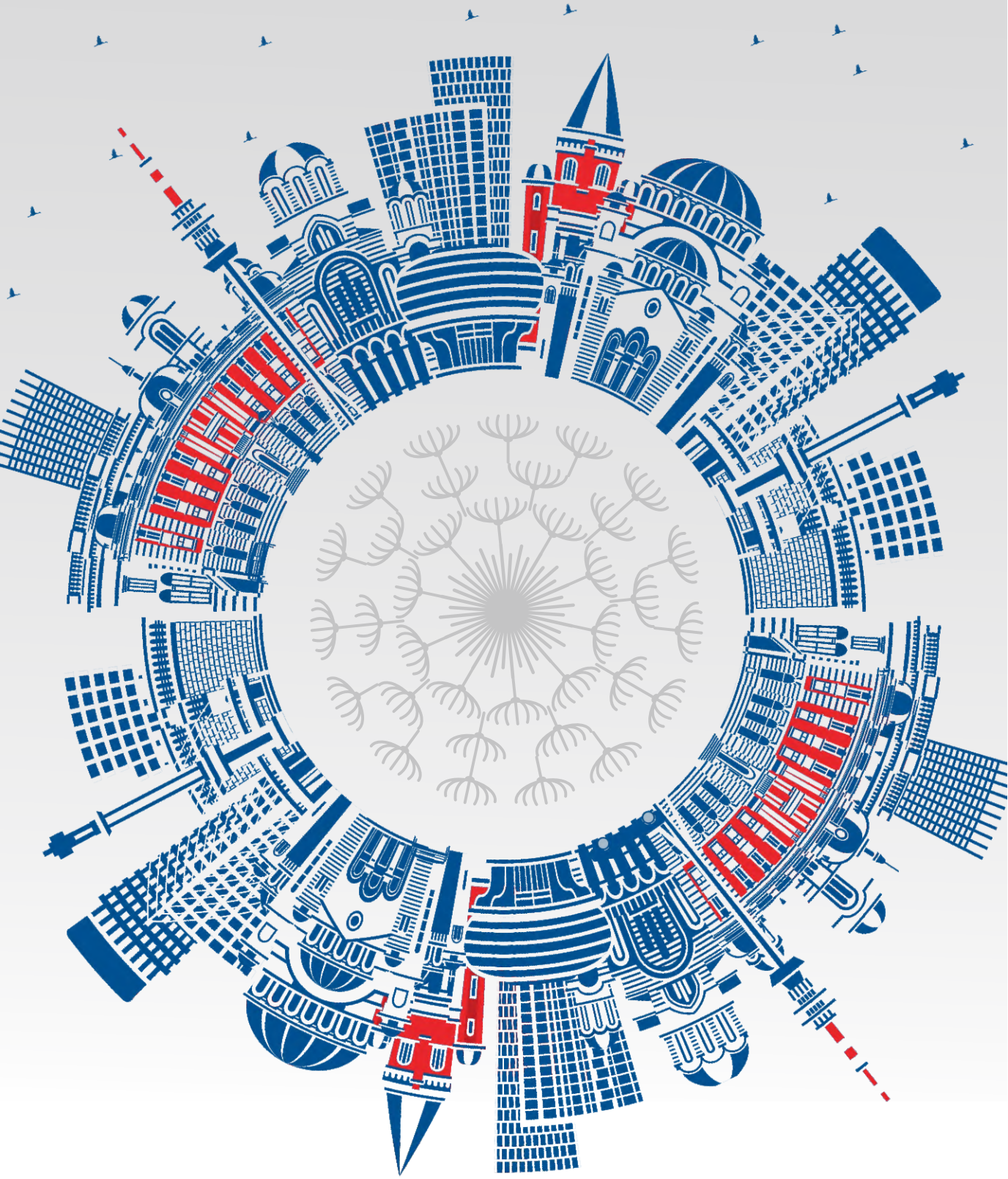

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