



**Abstract N°:** ID-160

**Topic:** Sexually transmitted infections, HIV/AIDS

### **Comprehensive Nursing Management and Adherence Promotion Strategies for HIV/TB Co-infected Patients**

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#### **Introduction**

To explore effective comprehensive nursing management models and adherence promotion strategies for patients with HIV and tuberculosis (TB) co-infection, and evaluate their impact on treatment adherence and clinical outcomes.

#### **Materials and Methods**

A prospective interventional study was conducted involving 186 HIV/TB co-infected patients between January 2022 and December 2023. Participants were randomized to receive either comprehensive nurse-led case management (intervention group, n=93) or standard care (control group, n=93). The intervention incorporated multidisciplinary collaboration, technology-integrated adherence support (SMS reminders and mobile health monitoring), structured health education, psychosocial counseling, nutritional supplementation, and community-based directly observed therapy. Primary outcomes included medication adherence rates, TB treatment success, CD4+ T cell recovery, and quality of life scores.

#### **Results**

The intervention group demonstrated significantly superior outcomes: medication adherence (92.5% vs. 75.3%,  $P<0.001$ ), TB treatment success (89.2% vs. 72.6%,  $P<0.01$ ), and mean CD4+ T cell increase (176 cells/ $\mu$ L vs. 108 cells/ $\mu$ L,  $P<0.05$ ). Patient-centered technology-integrated interventions reduced treatment failure by 43% compared to standard care. Multivariable analysis identified nurse-led case management, family support engagement, and digital health tools as independent predictors of treatment adherence ( $P<0.05$ ).

#### **Conclusions**

Comprehensive nursing management incorporating multidisciplinary collaboration and personalized interventions effectively improves treatment adherence and clinical outcomes in HIV/TB co-infected patients. This model provides valuable evidence for optimizing nursing care protocols in this vulnerable population.





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**Topic:** Sexually transmitted infections, HIV/AIDS

### **The Turning Point in Giant Condyloma: Verrucous Squamous Cell Carcinoma Arising in Buschke–Löwenstein Tumour**

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#### **Introduction**

Buschke-Löwenstein tumour (BLT), or giant condyloma acuminatum, is a locally destructive anogenital verrucous disease with a recognised risk of malignant transformation. Because BLT may persist for years with a benign-appearing, "condyloma-like" morphology, verrucous squamous cell carcinoma (SCC) can be missed unless clinicians actively search for focal change within the verrucous field, particularly in immunosuppressed patients.

#### **Materials and Methods**

We report a case illustrating a practical diagnostic pathway for suspected malignant transformation in BLT. A 36-year-old woman with chronic HIV infection receiving antiretroviral therapy (unvaccinated against HPV) presented with approximately seven years of progressively enlarging anogenital verrucous lesions associated with pain/burning, hygiene impairment and marked psychosocial distress. The work-up included detailed dermatologic and genital examination with regional lymph-node assessment, complete surgical excision of the dominant lesion for histopathology, immunohistochemistry (p16 and p63), tissue HPV genotyping, and staging imaging with contrast-enhanced thoraco-abdomino-pelvic CT and pelvic MRI.

#### **Results**

Clinical examination revealed extensive soft, exophytic, cauliflower-like verrucous vegetations involving the perianal, perineal and perigenital regions with suprapubic extension, consistent with BLT. Within this background, a distinct dominant vulvar lesion (~4.5 cm) was more keratotic-erosive, deformed and indurated than surrounding warty tissue, raising suspicion of malignant transformation; no palpable regional lymphadenopathy was identified. Histopathology demonstrated background vulvar condyloma acuminatum and an associated well-differentiated verrucous SCC, with an exophytic papillomatous component and an endophytic component composed of mature squamous islands infiltrating the dermis with a characteristic "pushing" front, keratin pearls and atypical mitoses, accompanied by chronic inflammation at the invasion front. Resection margins were free of tumour and no lymphovascular or perineural invasion was reported. Immunohistochemistry showed p16 negativity in tumour cells with a positive internal control; p63 displayed a wild-type basal pattern. Tissue HPV genotyping detected HPV 6 and HPV 52. Contrast-enhanced CT was unremarkable, and pelvic MRI showed only mild vulvar asymmetry without suspicious enhancement or diffusion restriction.

#### **Conclusions**

BLT should be managed as a high-risk verrucous entity in which a single "different" lesion may herald invasive disease. In long-standing or extensive anogenital warts - particularly under immunosuppression - new focal induration, erosion/ulceration, bleeding, pain or rapid growth should prompt immediate deep sampling and/or excision to avoid diagnostic delay. Complete excision with margin assessment and structured follow-up are essential to reduce morbidity and recurrence.

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### **An original case of secondary syphilis with hepatic involvement**

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#### **Introduction**

Secondary syphilis is a systemic infectious disease with diverse clinical presentations. Hepatic involvement is rare and may lead to diagnostic challenges. We report a case of secondary syphilis presenting with cholestatic hepatitis and characteristic skin lesions in a young patient, highlighting the importance of considering syphilis in the differential diagnosis of unexplained liver abnormalities.

#### **Materials and Methods**

A 28-year-old patient with no medical history was admitted to our department for asthenia, skin rash, and abdominal pain evolving for two weeks.

The general physical examination was unremarkable. Dermatological examination revealed erythematous papular lesions with peripheral desquamation involving the trunk and limbs. In addition, infiltrated erythematous-squamous lesions were observed on the palmoplantar areas.

Laboratory investigations showed an elevated C-reactive protein level of 56 mg/L, liver cytolysis three times the upper limit of normal, associated with marked intrahepatic cholestasis. Gamma-glutamyl transferase was markedly increased at 1000 IU/L, and total bilirubin was 27 µmol/L.

Chest X-ray and abdominal ultrasound were normal. Further investigations included viral serologies for hepatitis A, B, and C, as well as HIV, all of which were negative. Immunological tests were also negative.

TPHA and VDRL tests returned both positive, confirming the diagnosis of secondary syphilis with hepatic involvement.

The patient was treated with three weekly injections of benzathine benzylpenicillin (2.4 million IU each). Clinical evolution was favorable, with resolution of digestive symptoms and regression of skin lesions. After three months, VDRL became negative, and gamma-GT levels decreased to 500 IU/L.

#### **Results**

Secondary syphilis is a systemic infection caused by *Treponema pallidum*, resulting from hematogenous dissemination after the primary stage if left untreated. It is classically associated with polymorphic cutaneous manifestations, including maculopapular rash involving the trunk, limbs, and palmoplantar regions. Due to its wide range of clinical presentations and potential multi-organ involvement, syphilis is often referred to as the "great imitator."

Hepatic involvement during secondary syphilis, known as syphilitic hepatitis, is considered rare but is increasingly reported in the literature. It typically presents with a cholestatic or mixed pattern of liver enzyme abnormalities, characterized by marked elevations of alkaline phosphatase and GGT, with only moderate transaminase increases, which is consistent with our case<sup>1</sup>. Clinical symptoms are often non specific and may include asthenia, abdominal pain, and icterus, which can delay diagnosis.

The diagnosis of syphilitic hepatitis is mainly based on positive syphilis serology, exclusion of other common causes of

liver disease—such as viral hepatitis, autoimmune disorders, and drug-induced liver injury—and improvement of hepatic abnormalities after appropriate antibiotic therapy. Liver biopsy is not mandatory and shows non specific histological findings when performed.

### **Conclusions**

Although rare, liver involvement in secondary syphilis should be investigated. Furthermore, secondary syphilis should be considered in the presence of abnormal liver function tests, especially when suggestive skin lesions are also present.

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### **Acute urinary retention in a patient with herpesvirus infection**

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#### **Introduction**

The growing prevalence of viral infections, including sexually transmitted infections (STIs), their ability to affect the immune system and cause pathology of the nervous and cardiovascular systems requires closer attention and timely treatment. While localized manifestations of herpes simplex, genital, and zoster were previously considered the main manifestations of herpesvirus infections (HVI), today we can encounter the least expected clinical forms of HVI. Urinary disorders may occur in 2% of patients with HVI symptoms; however, genital herpes (HSV-II type) or herpes zoster III type (Herpes Varicella Zoster) are most often described as the leading etiopathogen. The aim of our study was to analyze a case of acute urinary retention in a patient with a primary fulminant episode of herpesvirus infection.

#### **Materials and Methods**

We observed a socially adapted patient, O., 25 years old, with a complete family. She presented with manifestations of an acute inflammatory process affecting the mucous membranes of the urogenital tract, oral cavity, and pharynx, as well as symptoms of acute urinary retention. The examination included microscopic, microbiological, and PCR diagnostics of urogenital tract discharge and scrapings from existing enanthems for the most common STIs; ELISA testing of serum to determine specific immunoglobulin class M against HSV-1 and HSV-2 infections; and routine general clinical examinations.

#### **Results**

Patient O. presented to our Center complaining of a painful rash in the mouth and vulva, a fever of 38.5°C, acute urinary and constipation for 24 hours, weakness, headaches, abdominal pain, lower back pain, and pain in the extremities, difficulty swallowing, and loss of appetite. A urinary catheter was placed in the polyclinic. She attributes the onset of the illness to sexual intercourse with her husband the previous day, who also developed similar rashes on his genitals and oral mucosa within 2 days of unrelated sexual contact with a woman she barely knew.

Objectively: Patient O.'s condition is moderate. Her body temperature, after taking antipyretics, is 37.4°C (99.5°F). She is lucid but lethargic. She is forced reclining position. Her abdomen is distended, tender to palpation, and enlarged. Severe swelling, redness, and a few superficial, grouped, painful microerosive lesions were noted in the oral mucosa, tongue, and vulva. The patient was urgently hospitalized at our Center. PCR analysis of scrapings from the rash and the mucous membranes of the urethral, cervical, and vaginal canals revealed HSV-1, HSV-2, Ureaplasma Urealythicum Parvo, and Gardnerella vaginalis. Serum ELISA revealed titers of Herpes simplex virus I type IgM and Herpes simplex virus II type IgM antibodies, threefold elevated compared to the control. The diagnosis was disseminated herpes, ureaplasma infection, endocervicitis, urethritis, cystitis, and bacterial vaginosis. Complication: acute urinary retention. After initiation of antiviral and antibacterial therapy, a significant improvement in the patient's condition and restoration of normal urination were noted on the second day.

## Conclusions

This case demonstrates a type of infectious and inflammatory cause of acute urinary retention, which was caused by the presence of herpes simplex virus types 1 and 2 and was due to rashes and swelling on the mucous membrane of the urethra, or due to local inflammatory changes and damage to the sacral nerves. The generalized nature of the process and clinical manifestations masked the clinical picture of Behçet's disease and, in the absence of targeted diagnostic testing for herpes simplex virus, could have led to inappropriate treatment.

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**Topic:** Sexually transmitted infections, HIV/AIDS

### **Disseminated Painful Nodules as an Atypical Cutaneous Manifestation of Syphilis: A Case Report**

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#### **Introduction**

Syphilis is a chronic infectious disease caused by *Treponema pallidum* that has accompanied humankind for centuries. Despite the availability of effective antibiotic therapy, syphilis remains a significant public health concern. After a marked decline in incidence following the introduction of penicillin, a steady increase in new cases has been observed in recent years, particularly in developed countries. The clinical presentation of syphilis is highly variable and depends on the stage of infection. Early syphilis most commonly manifests as a primary chancre and a macular or papular rash; however, atypical cutaneous presentations may occur and pose substantial diagnostic challenges. Owing to its ability to mimic a wide range of dermatological conditions, syphilis is commonly referred to as the “great imitator.” Nodular inflammatory lesions represent a rare and poorly described manifestation, often leading to misdiagnosis as inflammatory, granulomatous, or neoplastic disorders. The aim of this study is to present an unusual cutaneous presentation of syphilis characterized by disseminated painful nodules and to emphasize the importance of serological testing in patients with atypical skin lesions.

#### **Materials and Methods**

A 28-year-old woman was admitted to the dermatology department due to painful, disseminated nodular skin lesions persisting for approximately one month. Her medical history included sleeve gastrectomy performed two years earlier and gastric bypass surgery one month prior to the onset of skin lesions. Before admission, the patient had been treated unsuccessfully with intravenous and oral glucocorticosteroids, lymecycline, and topical antibiotic-corticosteroid combinations. Physical examination revealed multiple erythematous, firm, indurated nodules, some of them confluent, located on the trunk, upper extremities, and face, as well as a single lesion on the scalp. Dermoscopic examination demonstrated structureless red areas with sparse, unfocused linear vessels; subtle central hyperpigmentation was observed in selected lesions. The mucous membranes and lower extremities were not involved. Laboratory investigations showed elevated C-reactive protein levels (14 mg/L). Serological testing using a chemiluminescent microparticle immunoassay (CMIA) revealed positive anti-*Treponema pallidum* antibodies, along with TPHA positivity and a VDRL titer of 1:32. The patient denied any previous diagnosis or treatment for syphilis.

#### **Results**

Based on the clinical and serological findings, syphilis of unknown duration was diagnosed and appropriate treatment was initiated. Due to the patient's history of bariatric surgery and concerns regarding impaired gastrointestinal absorption, doxycycline therapy was avoided. The patient was treated with intramuscular benzathine penicillin G administered in three weekly doses of  $2 \times 1.2$  million IU. One month after completion of therapy, complete resolution of all inflammatory nodular lesions was observed, with residual post-inflammatory hyperpigmentation. The single scalp lesion resolved with subsequent scarring and permanent hair loss.

#### **Conclusions**

This case highlights the broad clinical spectrum of syphilis and its potential to present with rare and misleading cutaneous manifestations, such as disseminated painful nodules. Atypical presentations may result in delayed diagnosis and ineffective treatment. The presented case underscores the necessity of including serological testing for syphilis in the diagnostic examination of unexplained nodular skin lesions and confirms the high efficacy of benzathine penicillin G even in clinically ambiguous cases.

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**Gonococcal Urethritis in a Referral Hospital(2015–2024): Changing Clinical – Epidemiological Profile and Antimicrobial Resistance**

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**Introduction**

Gonococcal infection is one of the most frequent bacterial sexually transmitted infections (STIs) in Spain; in 2024, 37,257 cases were reported (76.63 cases per 100,000 inhabitants). Recent changes in the epidemiology of gonococcal urethritis (GU), together with antimicrobial resistance, justify performing an updated analysis of its clinical and epidemiological profile in hospital practice.

**Materials and Methods**

To analyze the clinical characteristics and epidemiological profile of patients diagnosed with gonococcal urethritis managed at a referral hospital over almost ten years (July 2015 – December 2024). A retrospective observational study based on a hospital database including 3,457 STI diagnoses. Microbiologically confirmed GU episodes between July 2015 and December 2024 were selected. A descriptive, temporal, and comparative analysis of demographic, epidemiological, clinical, and microbiological variables was performed.

**Results**

A total of 385 episodes diagnosed as GU were included, showing a progressive increase in cases throughout the study period. The predominant profile was a young man (mean age: 30.04 ± 9.87 years) who presented to the Emergency Department with typical urethral symptoms (urethral discharge and/or dysuria; 350 cases; 97%). In women, asymptomatic or paucisymptomatic presentations were more frequent (16 cases; 66.7%). In 121 episodes (31.4%), there was a history of other STIs, mainly syphilis (26.8%). Patients with gonococcal reinfections (13.5%) and those with HIV infection (22.6%) had greater extragenital involvement. Diagnosis by culture and PCR allowed identification of concomitant microorganisms, notably *Chlamydia trachomatis* (17.7%) and *Haemophilus parainfluenzae* (13.5%). Antimicrobial resistance was detected to azithromycin (8.8%), ceftriaxone (2%), and tetracyclines (19.3%).

**Conclusions**

The results confirm an increase in gonococcal urethritis in recent years and changes in its clinical–epidemiological profile. Most cases were observed in young men, and in 31.4% of episodes there was a history of other sexually transmitted infections. Coinfections and emerging antimicrobial resistance reinforce the need for adequate microbiological identification, targeted treatment, and a comprehensive approach aimed at controlling transmission.

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### Acquired Epidermodysplasia Verruciformis Associated with HIV: A Case Report

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#### Introduction

Epidermodysplasia verruciformis (EV) is a rare condition characterized by selective susceptibility to infection with specific human papillomavirus (HPV) genotypes. While classic EV is a genodermatosis with childhood onset, an acquired form has been described in immunocompromised patients, particularly in those living with human immunodeficiency virus (HIV), with adult onset and a persistent clinical course. We report a case of acquired EV associated with HIV infection and highlight its clinical and evolutionary particularities.

#### Materials and Methods

A comprehensive dermatological clinical evaluation was performed. Diagnostic work-up included histopathological examination of skin lesions, immunovirological studies (HIV viral load and CD4+ T lymphocyte count), and HPV detection by polymerase chain reaction (PCR).

#### Results

A 30-year-old transgender woman with a history of HIV infection diagnosed in 2020 and long-standing poor adherence to antiretroviral therapy presented with a generalized pruritic dermatosis of several years' duration. Physical examination revealed multiple generalized flat warts and verrucous papules, pityriasis versicolor-like lesions, erythematous scaly plaques, some of them impetiginized, and Koebner phenomenon, involving the trunk, extremities, and photoexposed areas.

Since 2022, clinical suspicion of EV had been documented in the medical record, with HPV detected by PCR. In 2025, a skin biopsy confirmed the diagnosis, showing hyperkeratosis, hypergranulosis with prominent keratohyalin granules, and keratinocytes with basophilic, ground-glass cytoplasm. Immunovirological studies demonstrated an initially high viral load (41,240 copies/mL) and persistently low CD4+ counts (~200 cells/ $\mu$ L; 10–12%). Despite achieving undetectable viral load after reinitiation of antiretroviral therapy, cutaneous lesions persisted, with no evidence of clinical immune reconstitution. The patient did not complete subsequent follow-up.

#### Conclusions

Acquired epidermodysplasia verruciformis should be considered in the differential diagnosis of extensive verrucous dermatoses in patients living with HIV. This case highlights that virological suppression does not necessarily correlate with cutaneous improvement, particularly in the setting of prolonged immunosuppression, and underscores the importance of close dermatological follow-up and strict photoprotection to prevent malignant complications.





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Topic: Sexually transmitted infections, HIV/AIDS

### Topical Nitrizinc Complex Solution versus Spray-on Cryotherapy in the Management of Anogenital warts: A Comparative Study.

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#### Introduction

Anogenital warts (AGWs), caused primarily by low-risk human papillomavirus (HPV) types 6 and 11, are highly prevalent, recurrent, and impose a significant psychosocial and economic burden. Current treatment options, such as cryotherapy, are effective but associated with pain, scarring, and high recurrence rates. Nitrizinc Complex Solution (NZCS), a topical formulation of organic acids, nitric acid, and metallic salts, has recently been introduced as a potential alternative with antiviral and tissue-destructive properties. The objective of this study was to evaluate and compare the efficacy, tolerability, and patient satisfaction of NZCS versus spray-on cryotherapy in the treatment of anogenital warts.

#### Materials and Methods

A randomized split-body clinical trial was conducted including 40 patients (14 males, 26 females; mean age  $35.1 \pm 10.3$  years) with multiple AGWs. Each patient received NZCS on the left side and spray-on cryotherapy on the right side. Treatments were repeated biweekly for up to eight sessions. Clinical response was assessed by blinded dermatologists using standardized photography. Outcomes included wart clearance, onset of improvement, number of sessions required, adverse effects, and patient satisfaction.

#### Results

Both modalities achieved statistically significant wart reduction but non statistically significant difference in efficacy. Mean wart clearance was  $67.9\% \pm 27.6$  with NZCS versus  $60.3\% \pm 28.5$  with cryotherapy ( $p = 0.246$ ). Complete clearance was observed in 22.5% of NZCS-treated sites compared to 12.5% with cryotherapy. The onset of improvement was similar ( $p = 0.565$ ). Cryotherapy was significantly more painful (82.5% vs. 5%,  $p < 0.001$ ) and associated with higher rates of post-treatment hypopigmentation (50% vs. 27.5%,  $p = 0.039$ ). Other adverse effects were comparable. Patients showed higher satisfaction and preference for NZCS, though differences were not statistically significant.

#### Conclusions

Both NZCS and cryotherapy are effective and safe treatments for AGWs. NZCS demonstrated superior tolerability with less pain and hypopigmentation, making it a promising alternative.





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Topic: Sexually transmitted infections, HIV/AIDS

### The influence of nutritional deficiency on the formation and growth of genital warts in early toxicosis of pregnancy

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#### Introduction

Early toxicosis of pregnancy is one of the most common complications of gestation and can have a significant impact on the nutritional status of pregnant women. Nutritional deficiency in pregnant women is considered a key factor contributing to the progression of HPV-associated genital warts. Deficiencies of iron, folate, and other micronutrients lead to immunocompromise, impaired epithelial regeneration, and decreased antiviral resistance.

The aim of the study was to assess the impact of early toxicosis of pregnancy on the nutritional status of pregnant women and its association with the increase in HPV-associated genital warts.

#### Materials and Methods

Eighty pregnant women were examined in the first and second trimesters, divided into groups according to the severity of toxicosis: control (no toxicosis, n=27), moderate toxicosis (n=26), and severe toxicosis (n=27). Clinical symptoms, laboratory parameters (hemoglobin, ferritin, folates), as well as the number and growth dynamics of genital warts were assessed visually and by photographic recording.

#### Results

The average hemoglobin level was: control group - 125±7 g/L, moderate toxicosis - 115±8 g/L, severe toxicosis 102±10 g/L. Ferritin: control - 35±9 ng/ml, moderate toxicosis - 25±7 ng/ml, severe toxicosis - 16±6 ng/ml. Folate levels: control - 15±4 ng/ml, moderate toxicosis - 11±3 ng/ml, severe toxicosis - 7±2 ng/ml.

Condyloma growth: in the severe toxicosis group, 68% of patients experienced an increase in the area and number of condylomas over 4-6 weeks, compared to 38% in the moderate group and 11% in the control group. Correlation analysis revealed a strong inverse relationship between hemoglobin/ferritin levels and condyloma growth ( $r=-0.67$ ,  $p<0.01$ ).

The results demonstrate that severe toxicosis is associated with severe nutritional deficiency, which weakens the antiviral immune defense and promotes the active growth of HPV-associated genital warts. Iron and folate deficiencies impair cellular immunity and epithelial regeneration processes, creating conditions for viral persistence and exophytic proliferation. Severe toxicosis has been shown to be associated with iron and folate deficiency, decreased hemoglobin and ferritin levels, which are accompanied by accelerated growth and recurrence of genital warts.

#### Conclusions

Early toxicosis in pregnancy contributes to nutritional deficiencies and accelerated growth of HPV-associated genital warts. Timely monitoring of hemoglobin, ferritin, and folate levels, correction of deficiency conditions, and monitoring of

wart dynamics should be included in the comprehensive management of pregnant women with toxicosis and HPV infection.

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**Phospholipid-dependent coagulation abnormalities reveal an antiphospholipid-like immunesignature in serofast syphilis**

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### Introduction

The mechanisms underlying the serofast state in syphilis - defined as a lack of  $\geq 4$ -fold decline in non-treponemal titers after appropriate therapy - remain poorly understood. Persistent seroreactivity may reflect either the presence of viable *Treponema pallidum* or immune dysregulation. Given that non-treponemal tests detect anticardiolipin antibodies and that phospholipid-dependent coagulation assays identify functional effects of antiphospholipid antibodies (aPL), we hypothesized that persistent VDRL reactivity could be associated with subclinical aPL-related immune activity.

### Materials and Methods

Thirty-three adults with early syphilis were prospectively enrolled and classified six months after treatment into serofast ( $n = 8$ ) or non-serofast ( $n = 25$ ) groups. Eleven healthy volunteers served as controls. Plasma samples obtained at baseline and post-therapy were analyzed for lupus anticoagulant-sensitive activated partial thromboplastin time (aPTT-LA), dilute Russell viper venom test (LA1/LA2 ratio), and phospholipid-dependent PTT-LA mix, as well as for anticardiolipin (aCL) and anti- $\beta_2$ -glycoprotein I antibodies. Between-group differences were assessed using the Mann-Whitney U test with false discovery rate (FDR) correction and quantified by Cliff's delta. Predictive performance was evaluated by logistic regression and receiver operating characteristic (ROC) analysis.

### Results

At six months post-treatment, all phospholipid-dependent clotting assays (aPTT, LA1, LA2, LA1/LA2 ratio, PTT-LA mix) were significantly prolonged in serofast patients compared with non-serofast individuals (all  $q_{BH} < 0.01$ ;  $\delta = 0.75-0.83$ ). Only two patients fulfilled formal ISTH criteria for lupus anticoagulant positivity, yet the overall pattern indicated a consistent phospholipid-dependent prolongation. Compared with healthy controls, serofast patients showed a markedly higher proportion of "high-value" results exceeding the 99th percentile cutoff across all assays ( $p < 0.05$ ). In logistic regression, coagulation parameters strongly predicted serofast status (Model 1 AUC = 0.99, 95% CI 0.95-1.00), and this performance remained robust after adjustment for age and sex (Model 2 AUC = 1.00, 95% CI 0.97-1.00).

### Conclusions

Patients with persistent VDRL reactivity after syphilis treatment displayed coherent prolongation of phospholipid-dependent coagulation assays, consistent with subclinical antiphospholipid antibody activity. These findings suggest that the serofast state may represent an immunological endotype characterized by mild, infection-induced aPL interference rather than residual *T. pallidum* infection. Further studies using advanced immunological profiling are warranted to confirm this mechanism and to refine post-treatment monitoring strategies.

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**Elevated IL-10 serum levels are associated with slower serological response following syphilis treatment during pregnancy.**

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### Introduction

Approximately 50% of pregnant patients treated for syphilis do not achieve a decline in non-treponemal titers by delivery. The serological response in pregnant women is significantly slower compared to non-pregnant individuals, with unclear pathogenesis and clinical significance. This study aimed to determine the association between the host immune response and serological outcome in pregnant women with syphilis.

### Materials and Methods

Twenty-four females with early syphilis, including 14 pregnant women, were included. Pro-inflammatory and regulatory cytokines (IFN- $\gamma$ , TNF- $\alpha$ , IL-4, IL-1 $\beta$ , IL-10, TGF- $\beta$ ) were measured before treatment and 6 months after penicillin injection.

### Results

The median time to serological cure was 5 months for pregnant patients and 2 months for non-pregnant patients. Pregnant women had significantly higher serum levels of IL-10 and TGF- $\beta$  at baseline and 6 months post-treatment compared to non-pregnant individuals ( $p < 0.05$ ).

### Conclusions

A robust regulatory immune response to syphilis may be associated with a slower serological response to therapy during pregnancy. Treatment of syphilis with benzathine penicillin is highly effective. A decline in a non-treponemal titer after syphilis therapy is generally considered a marker of treatment success. However, as many as 50% of pregnant women treated for syphilis do not achieve this endpoint by the time of delivery. This raises significant concerns regarding the effectiveness of the therapy, and in the context of pregnancy, whether the treatment has effectively prevented fetal infection. Our findings suggest that a lack of decline in the non-treponemal titer during pregnancy may be associated with a predominance of a regulatory response to the infection by *Treponema pallidum*.





**Abstract N°:** ID-1127

**Topic:** Sexually transmitted infections, HIV/AIDS

**Intralesional Measles–Mumps–Rubella Vaccine Immunotherapy for Refractory Anogenital Warts in People Living With HIV: Clinical Response and Short-Term Outcomes**

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**Introduction**

Anogenital warts (AGW) are among the most common sexually transmitted infections worldwide and are predominantly caused by Human Papillomavirus (HPV) types 6 and 11. In patients with Human Immunodeficiency Virus (HIV), AGW are often more extensive, persistent, and resistant to conventional therapies due to impaired cell-mediated immunity. Intralesional immunotherapy using the measles–mumps–rubella (MMR) vaccine has demonstrated high clearance rates in immunocompetent individuals by inducing a Th1-mediated immune response; however, evidence in HIV-infected patients remains limited. Management of anogenital warts in people living with HIV remains challenging due to frequent recurrences and suboptimal responses to destructive therapies.

**Materials and Methods**

We report a 30-year-old man with HIV infection (CD4 count 439 cells/μL, CD8 count 2,307 cells/μL) who had been receiving antiretroviral therapy for six months and presented with multiple perianal AGW persisting for more than six months. Previous treatment with topical trichloroacetic acid 80% was unsuccessful. The patient underwent intralesional immunotherapy with the MMR vaccine (0.5 mL) injected into the largest lesion at three-week intervals. Clinical evaluation focused on lesion size reduction, development of new lesions, adverse events, and short-term follow-up outcomes.

**Results**

Clinical evaluation revealed a large perianal verrucous nodule with multiple surrounding papules. Dermoscopy showed mosaic and finger-like patterns with dilated vessels and white halos, consistent with AGW. After two sessions of intralesional MMR immunotherapy, lesion size was reduced by approximately 25%, with complete resolution of pain and pruritus, without new lesion development. Persistent residual lesions remained after the third injection. No systemic adverse effects were noted. Surgical excision was subsequently performed, achieving complete lesion clearance. Postoperative follow-up at one month showed satisfactory wound healing and no recurrence.

**Conclusions**

Intralesional MMR vaccine immunotherapy represents a safe and potentially effective adjunctive treatment for refractory anogenital warts in people living with HIV. Its therapeutic effect is mediated through activation of a Th1-dominant cellular immune response that enhances cytokine-driven cytotoxicity against HPV-infected keratinocytes. Although clinical response may be partial in the setting of underlying immunosuppression, the absence of new lesions during treatment and at three-month follow-up suggests a role in suppressing disease progression and early recurrence. Treatment efficacy appears to be influenced by the degree of functional immune recovery, particularly in patients with CD4 counts above 200 cells/μL. These findings highlight the importance of careful patient selection,

sufficient treatment sessions, and an individualized multimodal therapeutic approach to optimize outcomes in this population.

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Abstract N°: ID-1132

Topic: Sexually transmitted infections, HIV/AIDS

### Histopathological Distinction Between Pearly Penile Papules and Condyloma Acuminata: Resolving a Common Diagnostic Pitfall

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#### Introduction

Condyloma acuminatum (singular) is a common sexually transmitted infection caused by Human Papillomavirus (HPV), most frequently types 6 and 11, presenting as verrucous lesions in the anogenital region. In contrast, pearly penile papules (PPP) are benign anatomical variants unrelated to HPV infection. Despite their distinct etiologies, both conditions may appear similar, often leading to misdiagnosis, inappropriate treatment, and significant patient distress. Histopathological examination plays a critical role in establishing an accurate diagnosis and guiding appropriate management.

#### Materials and Methods

A 24-year-old male presented with a verrucous nodule on the penile shaft present for the past 8 months, accompanied by multiple small papules on the glans. A history of unprotected high-risk sexual activity was reported. ~~History of high-risk unprotected sexual activity was noted.~~ (*Kalimat ini dihapus karena pengulangan eksak dari kalimat sebelumnya*). Clinical examination, acetowhite testing, and histopathological evaluation of separate lesions were performed to establish an accurate diagnosis. Surgical and conservative management strategies were chosen based on definitive histopathological findings.

#### Results

Histopathological examination of the verrucous penile shaft lesion revealed epithelial hyperplasia, papillomatosis, hyperkeratosis, and prominent koilocytosis, consistent with condyloma acuminatum. In contrast, a biopsy of the papular lesions on the glans demonstrated acanthosis, papillomatosis, and dilated superficial dermal blood vessels without koilocytosis, characteristic of pearly penile papules. Histopathological evaluation plays a crucial role in distinguishing HPV-related condyloma (perbaikan ejaan) acuminata from the noninfectious PPP. The presence of koilocytosis serves as a key marker of HPV infection, whereas PPP exhibits angiofibroma-like features without viral cytopathic changes. Wide excision of the condyloma acuminatum lesion resulted in progressive postoperative wound healing without early recurrence.

#### Conclusions

Condyloma acuminata and pearly penile papules may coexist and present with overlapping clinical features, posing a diagnostic challenge. Histopathological examination is essential to distinguish HPV-related lesions from benign anatomical variants, thereby preventing overtreatment and reducing patient distress. The presence of koilocytosis remains a key histological marker of HPV infection, while its absence supports the diagnosis of pearly penile papules. Accurate diagnosis enables appropriate, individualized management and optimal patient counseling.

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Abstract N°: ID-1166

Topic: Sexually transmitted infections, HIV/AIDS

### Impact of Routine Multidisciplinary Screening on Syphilis Diagnosis: A Single-Center Comparative Study

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#### Introduction

Syphilis represents a major public health concern and has been under epidemiological surveillance in Greece. Over the past decade a marked rise in syphilis cases has been observed in Greece, according to data from the Hellenic National Public Health Organization.

Current CDC guidelines recommend specialized evaluation for neurosyphilis only in the presence of suggestive symptoms. However, subclinical ocular involvement may lead to delayed diagnosis, suboptimal therapeutic management, and further propagation of the ongoing epidemic surge.

This study aims to evaluate the effectiveness of a routine multidisciplinary screening protocol—including neurological (basic neurological examination), otolaryngological (ENT; clinical examination and audiogram), and ophthalmological assessments (visual acuity and fundus examination)—compared with a symptom-based referral approach.

#### Materials and Methods

We conducted a single-center, retrospective study including consecutive cases of syphilis diagnosed and treated at the University Hospital of Crete in a 12-year period (01/2013-01/2025). Patients were further divided into two cohorts: Cohort A included patients that underwent routine neurological, ENT, and ophthalmological evaluation regardless of symptoms, and Cohort B included patients that were evaluated upon presence of suggestive symptoms.

#### Results

A total of 224 patients were included. **Cohort A** comprised 99 patients, and **Cohort B** 125 patients. Overall, baseline characteristics (**Table 1**) were well-balanced between the two cohorts: **mean age** ( $38 \pm 16$  vs  $37 \pm 11$  years), proportion of men who have sex with men (**MSM status**, 68.3% vs 64.6%), **HIV co-infection** (11.1% vs 7.8%, respectively). In addition, Cohort A had a higher proportion of **early-stage syphilis** (59.6% vs 42.2%,  $p = 0.07$ ), whereas Cohort B showed a higher prevalence of **latent/unknown-stage syphilis** (42.2% vs 23.2%,  $p = 0.004$ ). These findings reflect the characteristics of the current epidemic surge, since systematic routine screening has been implemented in our department since 2022 to ensure effective outbreak control.

In Cohort A, cutaneous manifestations were present upon examination in 62% of patients: genital or extragenital ulcer (17%), rash (33%), other (12%). Two patients presented with clinical symptoms suggestive of ocular syphilis and neurosyphilis. Both patients underwent lumbar puncture, with CSF findings confirmed neurosyphilis in one case (positive CSF-RPR). The remaining 97 patients were asymptomatic and would have received a standard IM benzathine penicillin protocol according to syphilis stage. Thus, routine screening identified in 8 of these asymptomatic patients sensorineural hearing loss (1/8), visual acuity changes (1/8), iridocyclitis and anterior uveitis (4/8), hyperreflexia, pallesthesia or mild disorientation (2/8). All 8 patients underwent lumbar puncture, leading to the confirmation of neurosyphilis in 5 cases.

In Cohort B, cutaneous manifestations were present upon examination in 61.6% of patients: genital or extragenital ulcer (13.6%), rash (28.8%), other (19.2%). One patient had symptoms (specifically loss of vision) leading to the diagnosis of neurosyphilis. The remaining patients were asymptomatic and received the standard IM benzathine penicillin protocol

according to their syphilis stage. In total, routine screening modified the treatment schedule in five cases. The difference in detection rates of neurological involvement between the routine screening group (Cohort A, 6.1%) and the non-routine group ( Cohort B, 0.8%) was statistically significant ( p = 0.042).

The median (IQR) time of follow up was one year. An important limitation of our study is the high rate of patients lost to follow-up, specifically 25.3% in Cohort A and 76% in Cohort B.

<b>Table 1.</b> Baseline characteristics of study participants			
<b>Variable</b>	<b>Cohort A (n=99)</b>	<b>Cohort B (n=125)</b>	<b>p-value</b>
<b>Age (years), mean (SD)</b>	38 ± 16	37± 11	0.712
<b>Gender, n (%)</b>			0.135
- Male	84 (84.8%)	96 (76.8%)	
- Female	15 (15.2%)	29 (23.2%)	
<b>MSM Status*, n (%)</b>	41 (68.3%) (n=60)	42 (64.6%) (n= 65)	0.658
<b>Syphilis Stage, n (%)</b>			
- Early	59 (59.6%)	53 (42.2%)	0.007
- Late	17 (17.2%)	19 (15.2%)	
- Latent / Unknown	23 (23.2%)	53 (42.2%)	0.004
<b>Baseline RPR Titer, median (IQR)</b>	1:32 (1:2–1:640)	1:32 (1:2–1:1064)	0.910
<b>HIV Co-infection, n (%)</b>	11 (11,1%)	7 (7.8%) (n=90)	0.435

## Conclusions

This study suggests the implementation of a proactive, multidisciplinary protocol (ENT, ophthalmology and neurology) at the initial clinical staging of syphilis patients to prevent the underdiagnosis of neurosyphilis.





Abstract N°: ID-1307

Topic: Sexually transmitted infections, HIV/AIDS

### Neutrophilic dermatosis with plasmocytic infiltrate following secondary syphilis

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### Introduction

Neutrophilic dermatoses (ND) are a group of inflammatory disorders characterized by sterile neutrophilic infiltrate on histology.<sup>1</sup> Syphilis, the disease caused by the spirochete *Treponema (T.) pallidum*, has variable clinical presentations and cutaneous morphologies, earning it the title “the great imitator.”<sup>2</sup> We report a case of syphilis-associated neutrophilic dermatoses in an immunocompetent individual.

### Materials and Methods

A 40-year-old male was admitted inpatient for five months of diffuse tender 0.6-to-1.0-cm abscesses concentrated on the trunk and extremities which subsequently ulcerated. Around the time of lesion onset, he received treatment for newly diagnosed secondary syphilis. In the interim months, he sought care multiple times for an increasing number of lesions, receiving a total of three rounds of intramuscular penicillin and long courses of other antibiotics for presumed syphilitic or infectious abscesses, without lesion improvement. Upon admission, a lesional biopsy showed epithelium lined cystic cavitation with associated neutrophilic pustular infiltrate, prominent plasma cell infiltration, and multinucleated giant cells. No spirochetes were observed on special stains and the work-up for underlying malignancy, autoimmune conditions, and infections, including tissue cultures, was negative. The patient was started on prednisone and given intralesional triamcinolone, with marked improvement of his symptoms five days later. He was then discharged on prednisone. The clinical presentation, pathology, and response to steroids favored ND as the cause of his symptoms.

In outpatient follow-up three days later, examination showed multiple healing ulcerations with pink to violaceous borders and some peripheral pustules on the trunk and extremities that were improved from discharge. Prednisone was tapered and supplemented with dapson. At the subsequent appointment, dapson was increased and adalimumab was started for maintenance, which has resulted in continual improvement of his lesions. Intermittent flares have been managed with prednisone tapers and intralesional triamcinolone. Given his ongoing symptoms, consideration is being made to switch him from adalimumab to infliximab.

### Results

We report a case of a 40-year-old male who presented with lesions consistent with ND and pathology findings of neutrophilic infiltrate admixed with plasma cells after being treated for secondary syphilis. Though the pathogenesis of ND is not fully understood, the literature describes autoinflammation triggered by infectious, inflammatory, neoplastic, or iatrogenic processes. In our case, the trigger for ND remains unclear; however, the lesional evidence of syphilis-like plasmocytic infiltrate may represent an underlying syphilitic inflammatory process as the insult that led to ND. Two published reports have described Sweet syndrome, a subtype of ND, associated with syphilis, though an exact causal relationship has not been established.<sup>2,4</sup> Previous research has shown that *T. pallidum* may stimulate neutrophil recruitment via IL-8 and reduce pro-apoptotic caspases in neutrophils to inhibit spontaneous apoptosis.<sup>5</sup> Additionally, *T. pallidum* infection leads to macrophage and T-helper 1 cell activation, inducing proinflammatory cytokines IL-1B, IL-6,

TNF- $\alpha$ , and IFN- $\gamma$ ,<sup>6</sup> all of which have been implicated in ND pathogenesis.<sup>1</sup> These mechanisms suggest that syphilis-associated autoinflammation could contribute to ND pathology.

### **Conclusions**

This emerging pattern of autoinflammatory disease may expand the known cutaneous manifestations of syphilis. Recognizing the possibility of syphilis-associated ND may aid in the diagnosis of patients presenting with ND-like symptoms in the absence of autoimmune or malignant history. This recognition may also spare multiple rounds of antibiotics for patients with presumed recalcitrant secondary syphilis or infectious lesions.

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**Abstract N°:** ID-1334

**Topic:** Sexually transmitted infections, HIV/AIDS

**Performance of a large language model-based AI chatbot for counseling patients with sexually transmitted infections and genital diseases**

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**Introduction**

The global burden of sexually transmitted infections (STIs) and non-venereal genital dermatoses (NVGD) is rising, but there is a shortage of adequately trained specialists and counselors to address this growing need. Current large language models (LLMs) like ChatGPT are not tailored for handling STI-related concerns. We developed an AI-based chatbot platform designed specifically for STI counseling and diagnosis, and assessed its performance.

**Materials and Methods**

The studied chatbot, based on the GPT-4 language model (version GPT-4-0613), employs a sequential multi-agent architecture within a state-based framework, leveraging LLMs and Deterministic Finite Automaton (DFA) principles to provide contextually relevant, medically accurate, and empathetic responses. The system consists of four main components: a general STI information module, an emotional recognition module, an Acute Stress Disorder (ASD) detection module, and a psychotherapy module. Another question suggestion agent operates in parallel. Four common STI-related diseases and two non-venereal genital diseases were evaluated using initiator prompts mimicking patient language. Each prompt was independently graded by two venereologists conversing with the chatbot as patient actors, on six criteria: diagnostic accuracy, overall accuracy, relevance, correctness of information, comprehensibility, and empathy, using a 6-point Numerical Rating Score.

**Results**

Twenty-three venereologists evaluated 30 prompts. Total 60 evaluations were analyzed. Across STIs, the chatbot scored highly on diagnostic accuracy (mean 4.1-4.7), overall accuracy (mean 4.3-4.6), correctness of information (mean 5.0), comprehensibility (mean 4.2-4.4), and empathy (mean 4.5-4.8). However, relevance scores were lower (mean 2.9-3.6), suggesting some redundancy. Diagnostic scores for non-STIs were lower ( $p=0.038$ ). Greater than 1-point NRS difference between the venereologists assessing same prompt was low (19/150 pairs, 12.7%), suggesting good agreement.

**Conclusions**

The AI chatbot, with its multi-agent architecture and DFA-based conversation flow, can provide accurate, correct, and easily understandable STI-related information in an empathetic manner. Further improvements are needed to enhance response relevance and reduce redundancy. With additional refinements, AI chatbots could help alleviate the burden on healthcare systems by providing accessible, reliable, and empathetic STI counseling and diagnostic support.





**Abstract N°:** ID-1373

**Topic:** Sexually transmitted infections, HIV/AIDS

### **A Great Mimicker in an Immunocompromised Host: Secondary Syphilis with Ocular Involvement in Advanced HIV**

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#### **Introduction**

Syphilis is well known for its protean clinical manifestations. Involvement of the palms and soles in secondary syphilis is considered an important diagnostic clue in clinical practice. Ocular syphilis is an uncommon but potentially vision-threatening manifestation that may occur at any stage of the disease. The clinical presentation and course may be more severe and rapidly progressive in individuals with human immunodeficiency virus (HIV) infection. Early diagnosis, multidisciplinary evaluation, and adherence to standard treatment guidelines are essential to prevent long-term morbidity and systemic complications.

#### **Materials and Methods**

##### **Case Report**

A 38-year-old male presented with multiple asymptomatic, erythematous, scaly papules and plaques over the bilateral palms of two months' duration, associated with progressive blurring of vision for one week. Examination of mucosae, scalp, and nails was unremarkable, and no significant generalised lymphadenopathy was detected at presentation.

In view of the visual complaints, the patient was referred for ophthalmological evaluation. Detailed ophthalmic examination, including slit-lamp and fundus assessment, revealed retinal vasculitis, panuveitis, and vitritis. Based on the presence of palmoplantar papulosquamous lesions along with ocular findings, a provisional diagnosis of secondary syphilis with ocular involvement was considered. Serological investigations showed a reactive Venereal Disease Research Laboratory (VDRL) test with a titre of 1:16, supporting the clinical diagnosis.

Further evaluation revealed that the patient was HIV positive, and immunological assessment showed a CD4 count of 27 cells/mm<sup>3</sup>, indicating severe immunosuppression and a high risk of opportunistic infections. In accordance with the latest National AIDS Control Organisation (NACO) guidelines, the patient was further evaluated for opportunistic infections, including tuberculosis and other common co-infections. During the examination, the patient was also noted to have candidal balanitis, which was managed with oral fluconazole and topical antifungal therapy, resulting in clinical improvement. Considering the markedly low CD4 count and the ocular findings, cytomegalovirus infection was also suspected, and the patient was treated with systemic ganciclovir as per standard recommendations.

For the management of ocular syphilis, the patient received a 14-day course of intravenous crystalline penicillin in recommended doses. After completion of intravenous therapy, the patient received weekly intramuscular benzathine penicillin (2.4 million units) for three weeks as consolidation therapy, considering HIV co-infection and the possibility of concurrent latent disease. He was counselled regarding the nature of HIV infection, the importance of adherence to therapy, and the need for long-term follow-up. Antiretroviral therapy was subsequently initiated in the form of a tenofovir-lamivudine-dolutegravir (TLD) regimen, along with cotrimoxazole preventive therapy prophylaxis to reduce the risk of opportunistic infections. The patient was managed with a multidisciplinary approach involving dermatology, ophthalmology, and internal medicine, and was kept under close follow-up for monitoring of clinical response, visual status, and immunological recovery.

## Conclusions

This case highlights the importance of recognising palmoplantar papulosquamous lesions as a marker of secondary syphilis, particularly in immunocompromised individuals. Ocular involvement requires prompt diagnosis and treatment to prevent irreversible visual loss. Screening for HIV and opportunistic infections is essential in such patients. Early diagnosis, appropriate antimicrobial therapy, and timely initiation of antiretroviral therapy are crucial for improving outcomes and reducing morbidity.

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Abstract N°: ID-1480

Topic: Sexually transmitted infections, HIV/AIDS

**Sociodemographic, epidemiological and clinical analysis of patients treated for syphilis in the years 2017-2024: preliminary results.**

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### Introduction

Syphilis remains a significant public health problem worldwide, with a resurgence observed in many countries over the last decade. Despite the availability of effective diagnostic tools and effective treatment, changing sexual behaviors, population mobility, and persistent gaps in prevention strategies have contributed to rising incidence rates. The COVID-19 pandemic has further disrupted sexually transmitted infection surveillance, access to diagnostic services, and continuity of care, potentially affecting both transmission dynamics and case detection. Understanding the sociodemographic, epidemiological, and clinical characteristics of patients diagnosed before and during the pandemic is essential for improving early diagnosis, optimizing treatment strategies, and developing resilient, targeted prevention programs.

### Materials and Methods

This study presents a preliminary report based on statistical analysis of the medical history of patients treated for syphilis in our department between 2017 and 2024, focusing on demographic profiles, routes of transmission, disease stage at diagnosis, and selected clinical features with an emphasis on the impact of the COVID-19 pandemic.

### Results

Between 2017 and 2024, 582 patients with syphilis were analyzed. A significant increasing temporal trend in the annual number of syphilis cases was observed between 2017 and 2024 (Poisson regression,  $p < 0.001$ ; Spearman's  $\rho = 0.83$ ,  $p = 0.010$ ), with a transient decrease in 2020 followed by a marked rise after 2021. Men predominated in all years, and no overall association between year and sex was observed ( $\chi^2$  test,  $p = 0.397$ ), although a small but significant difference was noted between 2018 and 2020 ( $p = 0.048$ ). The proportion of patients from urban areas was consistently higher than from rural areas; however, no overall association between year and area of residence was found ( $p = 0.243$ ), despite isolated differences between selected years. A significant association was observed between year and type of sexual contact (homosexual vs heterosexual) ( $p = 0.037$ ), with marked differences, particularly in 2021, compared to several other years. Disease stage (early or late syphilis or syphilis of unknown duration) was also associated with year ( $p = 0.0004$ ), although no significant differences were detected in year-to-year comparisons. HIV status varied significantly over time ( $p = 0.013$ ), with 2018 differing significantly from multiple other years. Symptomatic presentation of syphilis was significantly associated with year ( $p = 0.002$ ), with 2017 showing a distinctly higher proportion of asymptomatic cases compared to all subsequent years.

### Conclusions

Despite overall stability in sex distribution and area of residence, this study demonstrates significant temporal changes in sexual transmission patterns, disease stage, HIV co-infection, symptomatic presentation, and the annual number of syphilis cases. The sharp decline in diagnoses in 2020, followed by a pronounced and sustained increase from 2021 onward, suggests that the COVID-19 pandemic likely disrupted access to testing and delayed diagnosis during its early phase, with a subsequent rebound effect and intensified transmission in the post-restriction period. These findings

underscore the impact of external public health crises on sexually transmitted infection surveillance and highlight the need for resilient screening strategies and targeted prevention efforts during and after such disruptions.

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