

# Are only Features of Sexually Transmitted Disease A Condition for Successful Therapies? (Numerous Facts by Studies, Question, Comments Recommendations and Conclusions)

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**Abstract:** *Issues of genital infections are very complex, with high infectivity and first step but insufficient is microbiological diagnosis. Successful treatment will depend on a series of problems of these infections, especially sexual transmitted disease (STS). In our review, we considered 10 major key questions and suggests recommendations, clinical decisions that imposed by the feature of these issues supporting by recently literature. The success of this approach will depend on a variety of factors, sex education level of the population, special importance of confidence between medical staff and patients, law obligations between patients, detection of asymptomatic infections, consideration of chances for complications as chronicity, sterility, sepsis, cancer, hepatic failure, meningitis, encephalitis, dementia, etc. Preventive medicine, careful consideration of a number individual factors, public health policy, law obligations, education level of population, gynecologic plan, and not only characteristics of STD, are conditions for successful treatment of these infections.*

**Keywords:** STD, asymptomatic infection, carcinoma in situ, coinfection, confidence

## 1. Introduction

Careful decisions and treatment of the genital infections( GI) is important because their potential for at least high infectivity and four important complications: sterility, high chances for chronicity, life-threatening complications as sepsis, meningitis, etc., chances for cancerous transformation especially during viral sexual transmitted disease.

These infection can be divided: 1. according to localization and spreading( dissemination): lower or upper urogenital infections 2. presence of microbial infection: viral, bacterial, parasitic, mycotic infections 3. by prognosis: acute or chronic infections 4. STD or not STD.

Among the most common sexual infection must mention: trichomonas vaginalis, chlamidia tracomatis, gonococcus, syphilis, gardnerela vaginalis, candida albicans. Among viral infection we must mention especially: HIV/AIDS, genital herpes, human papilloma virus.

Successful treatment of sexually transmitted disease depend on a series of problems of these infections, but and many aspects of sexual life as level of education of population, gynecologic plan, public health training and policies, cultural traditions, law regulation about couples or partners with STS, etc.

We'll discuss only 10 main issues of these diseases to reinforce continues attention, importance of right decisions, progress of science to these diseases and necessity of more

stronger simultaneous actions of relevant institutions and medical teams and scientists to these diseases.

## 2. ABC Message

ABC message is a key point of preventive medicine for sexual transmitted disease:A-Abstinence-delaying sexual debut in young persons; B-Being faithful to one partner/limiting the number of sexual partners; C-Consistent use of condoms

### 2.1 First sexual intercourse situation in Albania and other countries facts

A-Early/Delay in sexual activity consequences facts

- Very low turnover rates among sexual partners (beginning 12 year old→average 20 partners; >28 years old→1.8 partners)
- Cits the odd of contracting sexually transmitted disease
- Leads to greater marital stability
- Woman who have more non-marital sexual partners are more likely to be infectes with STD(15)

Question and/or Comments:

Where would be the first gynecological visit?How can influence and minimize extra-marital and casual intercourses?

- Girls with early beginning of sexual life have more chances for depression, suicidal acts and negative emotional status or drug abuse. (21)

Question and/or Comments:

Which is the level of cooperation with school psychologist?

- f) The more teens were exposed to sexual content in movies, the earlier they started having sex and the likelier they were to have casual, unprotected sex.”(14)  
Question and/or Comment  
Which is the way to avoid excessive viewing of these movies?
- g) Necessary special policies for higher risk target groups for STD. (13)  
Question and/or Comment  
Can we identified all risk target groups?
- h) the lowest age of beginning of sexual life was in Germany( 14.5 year old for girls and 12.6 year old for man).(16)
- i) English girl claimed to have begun sexual activity at the age of 15.7. In France, Ukraine, and Poland the age of initiation was 16.0, 16.5, 18.8 respectively. (16)

For age responders 15-49 years old:

- j) The median ages at first sexual intercourse for women and men are similar to those reported in the 2002. (17)
- k) The median age among woman was 21.1 years in 2002, compared with 20.9 years in 2008-2009;
- l) For men median age of first sexual intercourse was 21.5 years in 2002, compared with 22.3 years in 2008-2009.(17)

*Question and/or Comment:*

*Early beginning of sexual life considered as an expression of independency, tendency of teenagers to say that they are modern and adults now.*

## **2.2 Being faithful to one partner/limiting the number of sexual partners;**

More than one partner situation and condom use or refusal of unsafe sex facts

- a) highest percentage of persons who had more than two partners in the past 12 months between age 15-49, is: 15-19=0.6% and a lowest 40-49=0.0 (17)
- b) Highest percent of person who had sexual intercourse in the past 12 months with a non-marital, non-cohabitating partners, between age 15-49 is 20-24= 13.6% and the lowest 40-49=0.8%. (17)
- c) Among woman and man who had two or more partners in the 12 months preceding the survey, one-fourth( 25%) used a condom at last sexual intercourse with such a partner.(17)
- d) Woman in urban areas( 34%), those with university or higher education(35%), and those with highest wealth quintile(40%) were more likely to use condom at last sexual intercourse with higher risk partner than a women.
- e) Refusing to have sexual intercourse with infected husband is the highest in urban areas, 90.5% in Tirana, 88% in woman with at least University, and lowest 59% in woman with no education or primary 4-year school. (17)

Question and/or Comment:

What is possible and what is impossible to prevent uncontrollable and multipartner sexual life.

- f) Sexual initiation of youths in selected European countries compared with their sexual and contraceptive knowledge, the contraceptive methods used depended on gender, place of residence and age.(16)

- g) Boys in comparison to girls more often used contraceptives (chi-square 41.9;  $p < 0.05$ ). Respondents living in large and average-sized cities were more likely touse contraceptives than those from rural areas. (16)
- h) Respondents over the age of 18 more often used contraceptives (chi-square 10.5;  $p < 0.05$ ) than the younger ones. A statistically significant relationship was noticed between the source of contraceptive knowledge obtained – from parents or doctors – and the frequency of its usage(16)
- i) There was no statistically significant influence of the level of education of the respondents’ parents on the usage of contraceptives.(16)

*Question and/or Comment*

*Nowadays we can say policies and tendencies to the increase of the intensity of free movement of people in Europe, and other countries worldwide, bring to the increase of the number of immigrants, refugees or tourists, and consequently to the greater tendency of people to hedonism.*

## **2.3 Optional Decisions and Recommendations**

Prevention programmes and campains for STD( especially HIV/AIDS) focus on three mentioned aspects of behavior, called ABC message. b.Go to the gynecologist c. Avoid sexual life with more than one partner d. Avoid drug, alcohol and drugs abusing and i/v injections with needle out of septic conditions.

## **3. Importance of cooperation between partners and between doctors and partners notification**

These important triangles communication are condition for successful treatment and infectivity of STD disease. Understanding, empathy, and respect is not enough for these cooperations. Law regulation is important in a great variety of social groups, behaviours and traditions. Partner notification can not be an optional thing. The most important solution is law regulation of partner notification for STD.

### **Clinical Guidelines for Partner Notification(CGPN) within Europe facts**

- a) The legal context for partner notification varies within Europe.(9)
- b) Some countries have wide-ranging legal obligations to enforce partner notification, others have laws that are not enforced, and some have none.”(9)
- c) CGPN within Europe:  
HIV – 12 of the 20;  
Syphilis – 12 of the 20; Gonorrhoea – 12 of the 20;  
Chlamydia – 12 of the 20; Mycoplasma genitalium – 7 of 9  
Trichomoniasis- Ten of the 14; Hepatitis B – Ten of the 16; Hepatitis C 9 of 13(9)
- d) Some countries, for example, Belgium, Greece, Ireland and Italy reported that they use international guidelines.(9)

*Question and/or Comments:*

*What about this question in Albania?*

Exists law regulation about this issue?

The obligation of partner notification by law in Albania exists only for HIV/AIDS patients. What can we do more? Which are the best solutions for health and human rights? Can we say that this situation is "grey" for European countries and worldwide?

### 3.1. Recommendation and Optional Decision

Right applying of these advices: a Necessity of simultaneous treatment of partners b. Interrupting of sexual intercourses during treatment c. Determination and accurate application of specific therapy d. The law or the ways of applying law obligation for informing the partner for sexual transmitted disease.

Do people know what said the law about obligation of informing the partner in their countries?

While maintaining confidence we increase trust, cooperation, and contribute to a prop, frequent and long-term monitoring, direct impact on successful treatment and patient quality of life or partners.

### 3.2 Low level of confidence and negative paradigm for treatment of STD in public health services

- a) We can see low level of confidence and including of public health services for treatment of sexually transmitted disease (9)

*Question and/or Comment:*

*Can we change this paradigm? How can we do that?*

Optional decision and recommendation.: More training and media promotion projects at this field.

### 4. Special Policies with High Risky Target Groups

More seriously situation so more attention and strengthen policies in high risky target groups

Facts about high risky target groups

- a) Youth involved in the juvenil delinquent population tend to be younger at first sexuelle experience in general population (22)
- b) 7.7% of 442 females and 556 males, were with Clamidia, 1.4% with gonococcus and 1.6% with clamidia and gonococcus simultaneously.
- c) Studies that have examined relationship between substance use and risky sexual behaviors involving both delinquent and non-delinquent youths suggest that substance users engage in risky sexual behaviors at a substantially higher reate than non users(22)

*Question and comments:*

*Can we identify in every case high risky individuals? Can this people realize more frequently examinations? Are these people every time under medical surveillance?*

- d) Of the 407 subjects, »62% had markers for 1 of the STDs. HIV infection was associated with African American race, use of smokable freebase (crack) cocaine, and STD history. (24)

*Question and/or Comment*

Can this subject realize HIV-1 rapid test? Are these people every time under medical surveillance?

- a) The infectivity of any infected individual is proportional to the number of previous contacts the individual has had with other infected individuals.(38)

Question and/or Comment

Generally two-three model of this infectivity , tell us impossibility of identification of all people with sexually transmitted disease.

In which proportion is this "ice-berg" situation?

- b) In a study of 948 newly arrested youths undergoing criminal justice intake processing in Tampa, Florida, more than 19 percent of girls and 11 percent of boys tested positive for chlamydia, gonorrhea, or both infections.(13)

- c) Sexual activity while using noninjected drugs was, at 8 percent, the second most commonly reported risk factor among boys and, at 9 percent, the third most common among girls.(13)

Question and/or Comment:

Very high correlation between arrested youths STD, tell us importance of states policies, to minimize crime and on the other hand imposes medical surveillance for this groups.

### 5. The Presence of Extragenital Signs

Urethritis and pelvic pain are associated with "maps type" balanitis, adenitis and presence of Nicolas Favre form of disease. (venereal limfogranuloma) Consider later complications of patients(gonococcal or non gonococcal arthritis, gonococcus conjunctivitis, Clamidi or gonococcus Fitz Hugh Curtis syndrome, (Infeksionet gjenitale femerore f 51), Reiter syndrome( Clamidia), encephalitis, meningitis etc., Karposi Sarcoma, pneumocistis carini pneumonia; ocular herpes, herpes encephalitis etc.(24, 25,26)

### Consider asymptomatic infections and simultaneous presence of more than one microbial organisms

Facts about this topic:

Simultaneous presence of more than one microbial organisms facts

- a) in 300 cases reviewed for simultaneous presence of more than one microbial organism
- b) 20% had pathogens presence of two microorganisms.
- c) 15.5% were with presence of two microorganisms, 0.5% were with presence of three microorganisms, and 0.5% were with presence of four microorganisms.
- d) Whenever diagnosed Trichomonas vaginalis we need to evaluate and the presence of more than one infection.
- e) Infection by gonococcus associated with disuria of purulent secretions, as well as the frequent asymptomatic situation in subacute and female forms.(1,2,25,26)

Question and comments:

Can we apply as routine multi-STD" rapid tests"?

- f) In 60% of cases we can see trichomonas in characteristic motion in native preparations. We suspected smelly secretions, green, associated with intense pruritus.

- g) More than half of Clamidia Trachomatis infection are asymptomatic(25,27)

*Question and Comments:*

Literature recommend periodic yearly routine urinary chechk up evaluation. Do people realize that? Is it enough?

- h) Candida albicans is more frequently asymptomatic or with atypical or vague symptoms (25,26)
- i) We can see erosive balanitis in 50% of cases. (25,26)
- j) Among women we can see much more pathogens signs, pruritus, white secretions, eritema or vulvovaginal edema. (25,26)
- k) Frequently accompanies other sexual or not sexual infections. If we use Gram stain, can see spores and micelas.(25,26)
- l) Main risks target groups we consider diabetics and woman that use contraceptives, or pathogens and therapy as immunosupressors or long treatment with high doses of antibiotics.(26)

*Question and Comments:*

*What is behind Candida infection? What about risky groups? Do we abuse with antibiotics?*

- m) Their findings show that smoking and continuously worn dentures, promote oral candidal colonization in diabetics.(33)
- n) There is a sharp rise in the incidence of C. albicans in the mouth and anus after antibiotic therapy. This increased incidence does not seem to be influenced by Vitamin B. complex.(34)
- o) Urethritis and pelvic pain are associated with “maps type” balanitis, adenitis and presence of Nicolas Favre form of disease. ( venereal limfogranuloma )  
In 30% of cases the infection is asymptomatic.(25,26)
- p) Later complications of patients(gonococcal or non gonococcal arthritis, Fitz Hugh Curtis, Reiter syndrome( Clamidia), encephalitis, meningitis etc.(25,26)

*Question and Comments:*

*What about candida, diabetic and dental problems?*

### 5.1 Optional decision and recommendation

Consider and suspect simultaneous infections possibility, identify risk groups, apply if you can, « STI multiple array ». These examination can detect at the same sample, 10 STS pathogens. (1)

### Chronic infections, recurrences, latent infections and complications care.

Consider noninfectious causes that can hold a persistent or recurrent infection.

Careful treatment, considering of “resistant microbial strains”

Consider the option of immune problems.

Patient investigation if properly received or followed appropriate therapy.

We should recommend the patients to avoid self – treatment or not consulted and irritating treatment. We need to make sure whether the doctor’s instructions are being implemented.

It is possible that an STD, to be presented with chronic hepatitis, as in the case of hepatitis B or C and to be asymptomatic or with vague and insignificant signs.Suspicion is valid and in this case we define the values of hepatic enzymes and antibodies and relevant antigens for type B and C viruses as a condition for right treatment.

Chronic infections, recurrences, latent infections and complications care facts

Hepatitis C risk of complications more than 65% of chronic hepatitis, cirrhosis or hepatocellular carcinoma were associated with an infection from hepatitis C.(5)

- a) Identification of high risk groups where HCVAg determined is one of the necessary precautionary steps. (37)
- b) Early diagnosis enables successful and optimal treatment for minimizing the complications.(37)
- c) Other examinations are AFP(alphafetoprotein) and ferritinemia as hepatocellular cancer biomarkers(37)

*Question and/or comments:*

*How can we stop the progress of fibrosis?*

- a) Acute gonococcal infection tends to go towards chronic infection. (24,25)
- b) Recurrency and latency are characteristics of herpes, hepatitis B, or hepatitis C viruses.(24)
- c) FibroMax<sup>TM</sup> or ELFTM , are recently groups of biomarkers that evaluate liver fibrosis as a possible complication of STD viruses that have liver tropism. (32)
- d) Oncogenes power is characteristic not only to HCV, HPV, but also to herpesviruses.(24,27)
- e) Do not neglect frst of all, urinary routine examination; if we see abnormal number of red cells casts, red blood cells, suspicion is for cystitis, pielonephritis, prostatitis etc.(31)

*Question and/or Comments:*

*Can we apply Fibromax<sup>TM</sup> or ELFTM in every country?*

## 6. Sepsis and Sterility

Sepsis and Sterility facts

- a) Untreated infections of lower tract can climb up and to provide upper urinary tract infections to infertility or septic condition.(26)
- b) For cervicit that later can cause sterility accused Clamidia Trakomatis, Neisseria Gonorhea, Ureaplazma urealiticum, Ureaplasma hominis, Ureaplasma parvum, Meningitis although quite rare. (27)
- c) HPV test and phenotyping should be performed in women aged between 35 and 50 years. (27)
- d) More than 10-40% of Clamidia infection in woman progressing to pelvic inflammatory disease, if untreated. (26,27)

*Question and Comments:*

*Do all people know and prepared for the cost of their sterility?*

Result: No baby or very high cost of artificial insemination

- a) Sepsis?-Send as soon as possible the patient to a specialized center, evaluate general signs, vital signs, laboratory and imagery orientation.
- b) Important initially examination can be early indicators of inflammation( presepsin, procalcitonin, C reactive protein), and serologic and microbiologic examination, and blood culture.(32, 28,29,36,40)
- c) Consider indications of culture blood( fever etc) and other microbiological examinations (24)

- d) early indicators of inflammation( presepsin, IL-6 procalcitonin, C reactive protein), and serologic and microbiologic examination, and ultrasound or CT, or MRI, too.(28,29,32,36,40)

*Question and Comments:*

*Do we know or apply as we need recently studied early indicators of sepsis and inflammation?*

- a) One study( Hamet et al) suggests that S100B protein released by astrocytes may be a biomarker of the severity and neurological complications of bacterial meningitis(32)
- b) Increased levels of CSF 14-3-3 protein have also been reported in acute bacterial meningitis and they decrease after antimicrobial therapy.(32)

*Question and/or Comment:*

*Do we know or apply as we need recently studied early indicators of neurological consequences of STD meningitis?*

### 6.1 Clinical Decision

Diagnosis( microbiologic and serologic examinations), general and specific treatment, local and oral or parenteral treatment. Careful evaluation and determination of an treatment plan( algorithm)

### 7. Evaluation of Cutane Signs.(Chancre etc.)

We should evaluate carefully chancre, and must differentiate his treponema origin from hemofilus dykrei, herpes simplex. This is contribution of specialists, trained personnel, and right medical experience.

### 8. Consider every Suspected Viral Infection Especially HIV/AIDS and HPV

HIV/AIDS and HPV important facts

- a) There are three main characteristics of HPV.: a.very high contagiousity,b. a lot serotypes, and some of them c. are accused as high carcinogenic, for uterine cancer. (24)
- b) Diagnostic specificity increased if we evaluate and males through urinar examination, sperm microscopy and specific evaluation, and urethral exams. (24)

*Question and Comment:*

*What about male check up frequency?*

For this reason it's necessary acid acetic test, PAP test, colposcopy, and gynecologic monitoring or guided biopsy.

*Question and/or Comment: Gynecologic training of general practitioner.*

*Go to your gynecologist!*

### 9. Medical Decision

Periodic check up of PAP test examination, with the onset of sexual activity, applying of vaccines by the professional instruction if it is possible.

Applause: Finally, since 2014, girls 9-26 years old or woman, boys 9- 13 can apply vaccine for HPV, Gardasil 9, too.

### 10. HIV/AIDS

#### 10.1 HIV Situation, Prevention and Other Main Problems Facts

Albania remains a country with lowest prevalence of HIV infection. In 2013 approximately 29000 persons over 15 years old are tested for HIV in Albania.(7)

*Question and Comment:*

*Based on the new trends of our society ; the question is: Should we be satisfied from the lowest prevalence?*

#### 10.2 AIDS has these Main Problems:

##### 1) Prevention

##### 10.2.1 Check up examination

Highest percent of women from 15-49 years old, tested and receive results is 25-29 years old=3.2% and person with highest wealth quintile 4.4% urban Tirana people =4.9% and the lowest percent is in no education people 0.0%. (17)

##### 10.2.2 Circumcision

48% of man responded in Albania have been circumcised. Lowest level is in coastal people 35% and highest 72.9% in urban Tirana people. (17)

*Question and Comments:*

*Do all people( parents) know importance of circumcisio for STD?*

##### 10.2.3 Because of special mechanisms, diagnosis, window period, has difficulties of early diagnosis.

- a) The first cell that is affected is TCD4. CD4 receptors bind the virus and then infect lymphocyte. This is associated with the increase in CD8 and decrease of CD4. reversing the ratio CD4 / CD8 is diagnostic.(18,19,20,27)
- b) Thrombocitopenia may be present, and lipodistrophy and lipoatrophy, especially during treatment with antiretroviral therapy. (18,19,20, 24,32)
- c) In the "window period", the ELISA and Western blot assays are negative or indeterminate, so additional testing are necessary(24,27)

*Question and/or Comments:*

*Attention to the proper nutritional status improve success of antiretroviral therapies(ARV) among HIV/AIDS patients. Evaluate atherogenic status of HIV/AIDS ARV treated patients. Be careful of hematological and neurological signs of HIV/AIDS patients who treats or not with ARV therapy.*

- d) Other cells that can be affected are monocytes macrophages and Langhans cells of the skin or Kupfer cells. Suspicion indicates HIV1 & 2 rapid test, as well as further CD4 or p24 Ag.(24,25,27)
- e) Often diagnosed in the later stage of Kaposi's sarcoma or those of Pneumocistis carinii infection.(25)
- f) Asymptomatic and Opportunistic Infections  
We can see virus in the blood and in sperm and vaginal sécrétions.(25)

What about of HIV-1 infected patients and dementia as later complication?(32)

Elevated levels of ceramide and accumulation of 4-hydroxynonenals were associated with active dementia, elevated of sphingomyelin is associated with inactive dementia, increased level of trygliceride C52 and vitamin E predicted the onset or worsening of dementia in HIV-1 Infected patients.(32)

*Question and/or Comments:*

*Attention to the proper nutritional status improve success of antiretroviral therapies(ARV) among HIV/AIDS patients. Evaluate atherogenic status of HIV/AIDS ARV treated patients. Be careful of hematological and neurological signs of HIV/AIDS patients who treats or not with ARV therapy.*

## 11. Conclusions

- 1) Persistent and preventive campaign regarding many aspects of sexual life, especially ABC message and policies for increasing of human development index.
- 2) Gynecological periodic visits. Which is the best age-group of first reproductive system visit?
- 3) Circumcizio applying and periodically applying of rapid tests especially HIV1&2 rapid test at persons over 15 years old or risk target groups according to multidisciplinary medical team decisions.
- 4) The possibility and application of "multiple STI array" examination type for successful treatment of more than one sexually transmitted disease simultaneously.
- 5) A treatment plan regarding the nature and duration of the treatment.
- 6) Vaccination is key point and one of the best successful achievement of preventive medicine in front of viral sexually transmitted disease challenges, especially for HPV infection.( Gradasil, Gardasil 9, Cervarix etc)
- 7) Law and law regulations, first about necessity of confidence and second about the question if it's necessary to enforce partner notification during sexual transmitted diseases and respectful communication between partners for safe sexually intercourses.
- 8) Special policies at higher risk target groups for sexually transmitted diseases.
- 9) Informational leaflets in public areas for STD.
- 10) Necessary of a second Albania Demographic and Health Survey, for more strongly policy reconsideration including STD.
- 11) Including of mathematicians and considering of integral calculations formulas to predict, consider and include high risk and " disease and life-risk potential" of STD, for the best preventive , diagnostic and prognostic decisions.
- 12) Careful treatment of diabetics, careful using of antibiotics, and vice versa considering everyone with candida albicans as target group for diabetic glycemia and HbA1c examinations and never forget, careful applying of routine examination as optic microscopy of urinary sediment as an important signal and low cost examination.

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