Abstract

Objective: to discuss theoretical and practical aspects of sexually transmitted diseases, AIDS, and psychoactive substances in adolescence, focusing on a holistic and multiprofessional approach.

Methods: review of national and international literature on concepts, classifications, social and cultural, clinical, therapeutic and preventive aspects of sexually transmitted diseases/AIDS, as well as the use of psychoactive substances, with the aim of pointing out problem-solving alternatives.

Results: adolescents do not show resilient behavior and are vulnerable to environmental hazards. For this reason, preventive actions and intervention for the control of sexually transmitted diseases/AIDS and use or abuse of psychoactive substances among adolescents are a priority. According to the World Health Organization, one out of 20 adolescents acquires sexually transmitted disease in the world every year and, more than 7,000 are infected by HIV every day, totaling 2.6 millions a year. This scenario results from unprotected sex and from the interaction between sexually transmitted diseases and psychoactive substances, especially alcohol.

Conclusions: it is crucial that health care providers consider magnitude, transcendence, vulnerability and feasibility as well as the set of interactions among substance, individual, and his/her social and cultural environment when the multifocal and holistic approach is used. This requires the formation of a support and protection network, involving the family, physicians, community, and adolescents. The major element in this network, though, are the adolescent themselves, who can overcome their conflicts, aiming at a healthy and longer life.

J Pediatr (Rio J) 2001; 77 (Supl. 2): s190-s204: adolescence, risk, vulnerability, sexually transmitted diseases, acquired immunodeficiency syndrome, psychoactive substances.

Introduction

The sexually transmitted diseases (STDs) are infectious and contagious diseases transmitted by direct contact during sexual intercourse and that have existed for thousands of years. STDs used to be associated with sexual promiscuity, prostitution, homosexuality, and sex before marriage. From a scientific standpoint, these diseases are part of the sexual
STDs and AIDS as a public healthcare priority

It is unmistakable that the STDs present high incidence rates and are related to other public healthcare problems. During the past years, the transcendence of AIDS and the implementation of strategic policies such as the Healthcare Community Agent Program (PACS) and the Family Health Program (PSF), in Brazil, and the citywide programs aimed at STDs and AIDS represent an emergency response by the public healthcare system to the problem of STDs.

The aggravations and problems of public healthcare and the attempts to solve these problem are related to four basic dimensions: magnitude, transcendence, vulnerability, and feasibility. Firstly, magnitude is related to the high prevalence of STDs and is associated with self-medication, inadequate treatments and dissemination. Secondly, transcendence is a result of STDs being the most important agents in facilitating the transmission of AIDS in all segments of society. Thirdly, the STDs are diseases highly vulnerable to primary preventive measures and treatment; with the exception of viral diseases, all other STDs are sensitive to specific treatment. Fourthly, the control of STDs is feasible depending on being carried out by fully-engaged professionals and on effective programs according to different levels of complexity.

There are two principles for the control of STDs at the basis of the health-disease process, namely 1) early detection of cases of STDs and adequate treatment of partners; 2) prevention of occurrence and relapse of the diseases by providing group and individual counseling, which should be aimed at showing that patients are key social players responsible for their health and treatment. This process of prioritizing and controlling STDs, which is advocated by the Brazilian Ministry of Health, is being implemented owing to the action carried out by citywide STDs/AIDS programs. These programs implement strategies in agreement with the reality of the different cities as well as healthcare services for STDs at the basic healthcare services network; in this sense, one of the results of these programs is eradicating self-medication and informal healthcare assistance at local drugstores/pharmacies.

Epidemiology of STDs and AIDS in adolescents

Currently, over half the world population are aged less than 25 years. In this young population, 29% are aged 10 to 24 years, out of which 80% live in developing countries, where STDs are among the most common healthcare problems. According to a survey by the Brazilian Ministry of Health, STDs are among the five main causes for patients seeking healthcare services. In Brazil, the population aged less than 25 years represents almost one third of the total population. In 1970, there were 18.3 million youths in Brazil, and in 2000, approximately 51 million. According to data from the World Health Organization (WHO), half of the HIV-infected patients worldwide acquired the disease before the age of 25. This problem has reached even worse proportions in Africa, where the conditions are so disheartening that they are almost beyond comprehension.

The HIV/AIDS epidemic is presently the most important biomedical phenomenon, which is at the basis of the emergency need for a better understanding of STDs and their interaction with the HIV. Based on a better understanding, the work of healthcare systems has been aimed at redirecting the emphasis on risk groups (somewhat marginalized by the society) to one that is more holistic and prejudice-free. The academic and scientific worlds themselves have been working towards understanding the changes in the epidemiological chain of AIDS, considering the matters of heterosexualization, feminization, juvenilization, pauperization, and ruralization of the disease, and of increasing the survival of HIV-positive patients.

Adolescents are in the front line of the AIDS pandemic, which presents a threat to their health and survival. One out of every twenty adolescents worldwide contracts some type of STD each year. Daily, over 7,000 youths are infected by the HIV totaling 2.6 million per year, which represents more than half the reported cases. It is estimated to 10 million adolescents are currently carriers of the HIV or are at risk for developing AIDS in the next three to 15 years. Approximately 80% of the cases of transmission of the HIV are a result of unprotected sex.
In epidemiological surveillance, the matter of AIDS is approached considering two different age groups of patients aged less than 13 years and of patients aged 13 years or older. In Brazil, data provided by the Ministry of Health in 2000 showed that from 1980 to 2000 there were 196,016 reported cases of AIDS, out of which 146,472 were males and 49,544 females. The number of HIV-positives aged less than 13 years reached 6,857; that of HIV-positives aged over 13 years increased 12% from 1995 to 1996 and has remained stable since then. From 1994 to 1998 the number of male HIV-positives increased 7.6%, and female, 71%, indicating an increase nine-fold higher in the numbers of women, which reached a 1:1 ratio. In relation to the categories of patients, there were 42.8% homosexuals; 22.0% homor bisexuals; and 9.9% injectable drug users (IDU). In the categories of IDU there was a 7.6% decrease in 1997 and a 17.9% decrease in 1998, which can be associated to the preventive measures, especially the damage control programs. Also, in the age group of 13 to 19 years, there was a 59.0% increase in positives among heterosexuals. The incidence of AIDS in Brazil is 14 cases per 100,000 inhabitants.9

After two decades since the appearance of the disease, Brazil is facing the problem of AIDS orphans. Since the first reported case of perinatal transmission, in 1985, to the present date, there are 30,000 children aged up to 15 years who have lost their mother due to AIDS. There are approximately 200,000 daughters of HIV-positives in Brazil.9-11

The AIDS epidemic in Brazil is the sum of microregional subepidemics that interact permanently with social, cultural and migration diversities; this requires approaching this matter in the light of risk and vulnerability criteria and concepts.8

STDs and AIDS: adolescence, risk, and vulnerability

At each physiological stage in life, individuals are subjected to complex processes of differentiation and maturation. These processes require internal motivation and external stimulation, which can offer positive or negative influences, the latter occurring through what is called risk situations.

Risk is related to the probability of an undesirable event, which is not independent of the social context, taking place. It is also related to a complex network of factors and interests of cultural, historical, political, social, economical, and environmental nature. These factors are related to the integral health of the individual, which, according to the PAHO/WHO is characterized as a dynamic process of personal and group responsibilities related to the day-to-day quality and way of life, which are inserted in a global context.12,13

The period of adolescence is characterized by greater exposure to risks due to the natural curiosity of youths in finding out about all that life has to offer; adolescents are thus potential explorers. More importantly, it is during this stage that individuals establish habits, customs, and conducts that will serve as reference for their future personality. In public policies and STDs/AIDS programs, the adolescent is perceived in the light of vulnerability.14

The concept of vulnerability is associated to three aspects: 1) that of citizenship, which indicates the possibility and necessity for individuals to be perceived as social players; 2) that which indicates that there is neither risk nor prevention that are not necessarily related to global and social aspects; 3) that of human diversity, which indicates that there is no universal referential for applying or implementing measures. While working with adolescents and focusing on vulnerability, it is important to ask oneself what does it mean to be an adolescent? how do adolescents behave? how do adolescents insert themselves into the environment? how do they practice their sexuality? and what situations help to increase vulnerability?14,15

Appro

ach and treatment of adolescents with STDs

Holistic approach

Adolescents who seek healthcare services carry, in addition to the clinical symptomatology, psychoaffective matters related to the symptomatology and to his or her understanding of the disease, consequences, and severity. It is important to keep in mind that STDs are a result of the practice of sexuality, and that the sexual values of each individual were established prior to, and fundament, their sexual activity, which is in a sense inserted in a global context.

If adolescent patients are not approached with due clarity and care, there may be negative consequences such as the omission of information necessary for the diagnosis, lack of concern as to the actual severity of the disease, and overestimation, which can lead to unnecessary distress or even psychological effects. It is important to remember that adolescents should be perceived as a whole, which is constituted of feelings, beliefs, and doubts. The organic behavior of adolescents is not restricted to the genital organs; there are also other diseases (diabetes, dermatosis, immunodeficiencies, and so on), nutritional status and use of medication that can interfere in both the diagnosis and treatment. Moreover, the exposure of one’s practices and behavior to a third party, or of one’s sexual orientation, does not represent an easy task, especially if the appointment is carried out in a mechanical fashion and the professional’s approach is unidirectional and prejudiced.1,4,12,14

Whenever possible, healthcare professionals should engage adolescent patients by carrying out a thorough
clinical and genital examination in the search for other STDs; providing guidance for the reduction of risks, orientation concerning hygiene, counseling; indicating an HIV test; stimulating compliance with the treatment and use of the condom; requesting the presence of the sexual partner; and offering immediate notification. Success of the clinical and therapeutic approach of adolescents with STDs is dependent on the patient feeling as a part of the solution to the problem.

**Clinical approach**

With the holistic approach at the basis of the medical practice, it is time to consider the clinical approach, which is aimed at immediate interruption of the chain of transmission of the disease.

The Ministry of Health, by voice of the National Coordination of STDs and AIDS, postulates a syndromic algorithm for the clinical and symptomatologic management of STD carriers as a strategy for the battle against, and control of, the diseases. This strategy was tested and validated in a multicenter study carried out in Brazil and later published in the Genitourinary Medicine, which was also later on used as a reference by the WHO and several other countries for the definition of STD policies.4,16

The syndromic approach is carried out considering four syndromes that comprehend STDs and the etiologic possibilities, thus proposing immediate intervention. This algorithm does away with depending on complex and slow laboratory exams on the first medical appointment, allowing for direct action using the existing resources.

The etiological approach has limiting factors, such as high costs; delay in laboratory exams (dark-field microscopy, study of chlamydia, culture exams of infection by mycoplasma, and others); diagnostic bias due to similarities in symptoms, especially in the case of genital ulcer lesions; no association between several STD etiologies, such as the Rollet’s chancre (soft and hard chancre), the infection by chlamydia and associated gonococci; absence of data related to clinical history of the incubation period of the disease.

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**Flow chart - Genital ulcer syndrome**

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Disease</th>
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<tbody>
<tr>
<td>Genital ulcer</td>
<td>Primary syphilis</td>
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<tr>
<td></td>
<td>Soft chancre</td>
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<td></td>
<td>Genital herpes</td>
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<td></td>
<td>Lymphogranuloma venereum</td>
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<td>Donovanosis</td>
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<td>Urethral discharge</td>
<td>Gonococcal urethritis</td>
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<td>Nongonococcal urethritis</td>
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<tr>
<td>Vaginal discharge</td>
<td>Vulvovaginitis and vaginosis</td>
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<td></td>
<td><em>Gardnerella vaginalis</em></td>
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<td>Trichomoniasis</td>
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<td></td>
<td>Candidiasis</td>
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<tr>
<td>Discomfort or pelvic</td>
<td>Cervicitis</td>
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<tr>
<td>pain</td>
<td>Gonococcal</td>
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<tr>
<td></td>
<td>Nongonococcal</td>
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<tr>
<td></td>
<td>Pelvic inflammatory disease</td>
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</tbody>
</table>

Therapeutic approach

Syndrome flow chart

Genital ulcer syndrome

ETIOLOGIC AGENTS
Syphilis (Treponema pallidum), soft chancre (Haemophilus ducreyi), lymphogranuloma venereum (Chlamydia trachomatis - serovar L1, L2, L3), donovanosis (Calymmatobacterium granulomatis), genital herpes (Herpesvirus hominis type 2)

PATIENT COMPLAINS OF GENITAL ULCER

ANAMNESIS AND PHYSICAL EXAMINATION - genitalia and inguinal region

YES

HISTORY OR EVIDENCE OF VESICULAR LESIONS

NO

LESIONS FOR OVER 4 WEEKS

YES

TREATMENT FOR SYPHILIS AND SOFT CHANCRE
Benzathine penicillin, 2.4 million IU intramuscularly (single dose), or oral doxycycline at 100mg every 12h for 15 days, or oral erythromycin stearate at 500mg every 6h for 15 days (pregnant women or patients allergic to penicillin) plus oral azithromycin at 1g (single dose), or oral ciprofloxacin at 250mg every 12h for 3 days, or ceftriaxone at 250mg intramuscularly (single dose). Sulfamethoxazole at 800mg plus oral trimethoprim at 160mg every 12h for 10 days or until clinical cure, or oral thiabendazole at 5.0g (single dose), or at 500mg every 8h, or oral erythromycin stearate at 500mg every 6h for 10 days or until clinical cure (pregnant women).

In cases of recurrence of genital herpes, treatment should start preferably upon appearance of first prodromes (joint pain, increase in sensitivity, itching, etc.) with oral valacyclovir at 500mg every 12h for 7 to 10 days, or oral famcyclovir at 125mg every 12h, for 5 days, or oral acyclovir at 400mg every 8h for 5 days.

In cases of severe symptoms with more extensive lesions, the following treatment should be administered: acyclovir intravenously at 5 to 10 mg/kg of weight every 8h for 5 to 7 days or until clinical cure. In the case of pregnant women, treat only the first episode with oral acyclovir at 400mg every 8h for 7 to 10 days.

TREATMENT FOR GENITAL HERPES

Watch for the following complications: development of secondary syphilis; congenital syphilis, formation of rectal, vaginal, or vesical fistula, rectal stenosis, fistulization of lymph nodes.

Indication Offer VDRL
Prevention Administer anti-HIV
Partners Notify partners
Compliance Wait for follow-up (10 days)

Syphilis is the most important, frequent and treatable cause of genital ulcer; the window for immune response is 50 days.

Carry out biopsy and initiate treatment for donovanosis

Oral doxycycline at 100mg every 12h, or sulfamethoxazole at 800mg plus oral trimethoprim at 160mg every 12h, or oral thiabendazole at 500mg every 8h, or oral erythromycin stearate at 500mg every 6h for at least 3 weeks or until clinical cure.

Flow chart - Urethral discharge syndrome

ETIOLOGIC AGENTS
Gonococcal urethritis: Neisseria gonorrhoeae; nongonococcal urethritis: Chlamydia trachomatis, Ureaplasma urealyticum, Mycoplasma hominis, and others.

PATIENT COMPLAINS OF URETHRAL DISCHARGE

ANAMNESIS AND PHYSICAL EXAMINATION
Retract the foreskin and, if necessary, press the urethra and study association with ulcers

AVAILABILITY OF BACTERIOSCOPY

YES

NO

POSITIVE FOR GRAM-NEGATIVE INTRACELLULAR DIPLOCOCCI (GNID)

YES

Investigate use of antibiotics; urination immediately before collection of discharge; collect urine samples within less than 3-hour intervals. Investigate patients with > 10 PMN per high power field and/or extra GNID and presence of yellow discharge suggestive of gonorrhea

NO

TREATMENT FOR CHLAMYDIA AND GONORRHEA
Oral azithromycin at 1g (single dose), or oral doxycyclin at 100mg every 12h for 7 to 10 days (contraindicated for pregnant women and breastfeeding mother), or oral thiamphenicol at 500mg every 8h for 7 days, or oral erythromycin stearate at 500mg every 6h for 7 days plus oral ofloxacin at 400mg (single dose), or oral cypromoxacin at 500mg (single dose; contraindicated for pregnant women, breastfeeding mothers, and patients aged < 18 years), or ceftriazone at 500mg (single dose) intramuscularly, or oral thiamphenicol at 2.5mg (single dose), or oral cefixime at 400mg (single dose).

TREATMENT FOR CHLAMYDIA
Oral azithromycin at 1g (single dose), or oral doxycyclin at 100mg every 12h for 7 to 10 days, or thiamphenicol for 10 days, or oral erythromycin at 500mg every 6h for 7 days

Watch for the following complications:
balanoposthitis, prostatitis, epididymitis, urethral stenosis, conjunctivitis, complications due to self-inoculation, and Reiter syndrome (nongonococcal urethritis)

Indication
Prevention
Partners
Compliance
Offer VDRL
Administer anti-HIV
Notify partners
Wait for follow-up (10 days)

Set up follow-up appointment to verify results and cure control. In case of persistent discharge or relapse, repeat treatment with oral azithromycin at 1g (single dose) plus oral cypromoxacin at 500mg (single dose) and oral metronidazole 2g (single dose).

PROVIDE ORIENTATION REGARDING:
Diet (alcohol, spices), sexual abstinence, no urethral milking. In cases of gonorrhea and nongonococcal urethritis: complicated – avoid single dosages; positive VDRL tests - administer treatment for latent syphilis; initial negative VDRL tests - repeat VDRL after 1 month (gonorrhea); in specific cases of infection of the urogenital tract by Mycoplasma - investigate sensitivity to antimicrobial agents.

Flow chart - Vaginal discharge syndrome

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Etiologic agents - vaginitis and vaginosis:
Trichomonas vaginalis, Gardnerella vaginalis, Candida albicans

Patient complains of vaginal discharge or of discharge in any situation

Risk factors Points
Partner with urethral discharge 2
Aged less than 20 years 1
More than 1 partner in the past 3 months 1
New partner in the past 3 months 1
No steady partner 1

Anamnesis (determine risk score)
Clinical and gynecological exams

Cervical mucopus or friable cervix or painful movement of the cervix or risk score greater than or equal to two?

YES

Treatment for gonorrhea and chlamydia

Vaginal discharge?

YES

NO

Vaginal discharge?

YES

Availability of microscopy

NO

Availability of vaginal pH and/or amine tests

NO

YES

Treatment for trichomoniasis, bacterial vaginosis and candidiasis

PH >4.5 or positive KOH test

PH <4

Treat for candidiasis

Treat for trichomoniasis

Investigate physiological and/or noninfectious causes

Collect sample for pap smear, offer VDRL and anti-HIV, provide orientation.

Indicate VDRL and anti-HIV tests, emphasize compliance with treatment, notify partner(s) in cases of cervicitis and trichomoniasis, set up follow-up appointment and notify.

Hyphae, spores or mycelia demonstrated by double refraction

Flagellated and mobile organisms

“Clue Cells” or absence of lactobacillus

Treat for candidiasis

Treat for trichomoniasis

Treat for bacterial vaginosis

Investigate physiological and/or noninfectious causes

Collect sample for pap smear, offer VDRL and anti-HIV, provide orientation.
Flow chart - Disconfort or pelvic pain syndrome

Etiologic agents: Neisseria gonorrhoeae, Chlamydia trachomatis, Ureaplasma urealyticum, Micoplasma hominis and others.

Patient complains of discomfort or pelvic pain

Anamnestic and clinical and gynecological exams (determine risk score)

Vaginal bleeding, delayed menses or recent delivery-abortion?

YES

Severe abdominal status: muscular defense, pain at decompression or fever > 37.5°C

YES

Suspected pelvic inflammatory disease (PID): painful movement of the cervix, pain elicited by palpation?

NO

NO

Cervical mucus or pus, friable cervix or risk score ≥2

YES

Go to vaginal discharge flow chart

NO

NO

Send patient to reference services

NO

Patient improved?

YES

Maintain treatment and emphasize compliance

NO

Provide orientation
Offer VDRL and anti-HIV
Notify partner(s)
Set up follow-up

NO

Therapeutic observations

Genital ulcer syndrome\textsuperscript{1,4,17,18}

1) Malaria, leprosy, and mononucleosis all positivate VDRL tests; 2) low-titer VDRL tests (less than or equal to 1:4 in asymptomatic patients whose partners were treated and no longer exposed can be considered serological scars; 3) the assessment of VDRL should be clinical and epidemiological; 4) adult schemes should be used in adolescents aged over 15 years; 5) sexually-active and exposed adolescents with previous treatment and positive serum, or in cases of uncertainty if the sexual partner was treated, should be considered as re-contaminated and submitted to treatment.

Urethral discharge syndrome\textsuperscript{1,4,12,13}

1) Pregnant or breastfeeding patients: \textit{chlamydia} - amoxicillin 500 mg for seven days, erythromycin 500 mg for 14 days; azythromycin 1g (single dose); \textit{gonorrhea} - ceftriaxone 400 mg; ceftriaxone 250 mg (intramuscularly); spectomycin 2 mg (intramuscularly; single dose); 2) treat sexual partners.

Vaginal discharge syndrome

1) \textit{Trichomoniasis}: systemic - tinidazole, metronidazole, secnidazole (all 2 g; single dose); metronidazole 500 mg for seven days. local: vaginal acidification and metronidazole for 10 days (ovules or topical). Observations: treat pregnant patients after the first trimester with metronidazole 2 g (single dose), breastfeeding patients with topical or ovules metronidazole for five days or 2 g (single dose); discontinue breastfeeding for 24 hours; treat the partner; tumor cytology can change due to trichomoniasis, carry out treatment and repeat after two to three months.

2) \textit{Bacterial vaginosis}: tinidazole or secnidazole 2 g (single dose); clindamycin 300 mg for seven days or topical for seven days (contraindication in pregnant women); metronidazole 500 mg for seven days, 2g (single dose), topical (vaginal cream) for five days.

3) \textit{Candidiasis: local}: miconazole, isoconazole, tioconazole, clotrimazole, nistatin (topical or ovules for three to 14 days). Observations: in cases of relapse, use systemic treatment with itraconazole 200 mg twice; fluconazole 150 mg (single dose); cetoconazole 400 mg for five days. Pregnant patients: local treatment; partners should only be treated in symptomatic or relapse cases. Examine patient for predisposing factors: diabetes, HIV, use of corticoids. Provide preventive and hygienic orientation.

Discomfort or pelvic pain syndrome

1) \textit{Scheme 1}: ceftriaxone 250 mg (intramuscularly; single dose) with doxyxyclin 100 mg for 14 days; \textit{scheme 2}: cefoxitin 2g (intramuscularly) with probencide 1g (single dose) and doxyxyclin 100mg for 14 days; \textit{scheme 3}: ofloxacin 400 mg and metronidazole 500 mg for 14 days; \textit{scheme 4}: ofloxacin 400 mg with doxyxyclin 100 mg and metronidazole 500 mg for 14 days; \textit{scheme 5}: ampicillin 3.5 g (single dose) with doxyxyclin 100 mg and metronidazole 500 mg for 14 days.

2) Treat partners.

Interaction STD-HIV-AIDS

The AIDS, which was first recognized in 1981, is a pandemic highly vulnerable to other STD, diseases, or opportunistic infections (OI). AIDS is the most important STD due to its social consequences, its high therapeutic costs, and high mortality rate despite the recent improvement in survival of seropositives.

Other STDs, especially genital ulcers, syphilis, soft chancre, LGV, donovanosis, herpes, and discharge (gonorrhea and chlamydia) increase the risk for transmission of the HIV up to 25-fold. This STD-HIV interaction is based on three premises: 1) HIV infection is an STD; in other words, patients who acquire or transmit STDs can also be acquiring or transmitting the HIV; 2) sexual intercourse is the main medium for transmission of the HIV, especially heterosexual intercourse; 3) the number of people who use the condom and practice safe sex is low.

Considering that AIDS is an immune deficiency, it follows that patients infected by the HIV can develop and require treatment for other STDs. In cases of HIV infection, the hepatic lesions become more severe, the response to acyclovir decreases - and so does the effectiveness of local treatment for condyloma acuminata with triacinolone acetonide (TAA) - in 80 to 90%, and the ulcerative lesions can be atypical and not return to normal with the usual treatment.\textsuperscript{1,2,4,17}

The opportunistic infections associated with AIDS present a significant etiological variety, including: virus (CMV, HSV, HPV); bacteria (mycobacteria, \textit{S. pneumoniae}, salmonellosis); fungi (pneumocystosis, candidiasis, cryptococciosis, histoplasmosis); and protozoa (toxoplasmosis, cryptosporidiosis, isosporiasis). According to the National Coordination of STDs and AIDS, the most frequently reported diseases by AIDS patients are candidiasis, pneumocystosis by \textit{Pneumocystis carinii}, tuberculosis (disseminated/extrapulmonary, pulmonary and inactive), cerebral toxoplasmosis, HSV, Kapo’s sarcoma, extrapulmonary cryptococciosis, and CMV.\textsuperscript{19}

In light of the current magnitude and transcendence of STDs and AIDS, there is an evident emergency need for implementing preventive, control, and diagnostic measures for STDs and, simultaneously, for the AIDS epidemic. The role of the pediatrician or physician caring for adolescent patients is to carry out systematic actions aiming at prevention, investigation, counseling, and diagnosis considering a syndromic approach; moreover, in cases of AIDS-positive adolescents, it is the healthcare professional’s duty to indicate the patient to a center of reference in order...
to contribute to control of the infection and increase in survival.

**Use and abuse of alcohol, smoking, and other psychoactive substances**

The use of psychoactive substances (PAS), generally known as ‘drugs’, is historically related to humankind in different contexts (religious, mystical, social and cultural, political, economical and so on). The PAS were, and still are, used at different times and in different settings for therapeutic, religious, and ludic reasons. However, in the past few decades, the indicators of the use of PAS have reached critical levels, and the consequences can be perceived in the family and at work, and in other settings of social and cultural interaction.

The WHO defines drugs as all substances that, when consumed, produce alterations changing one or more of the functions of the organism. We decided to discuss the matter of PAS considering that they can affect the central nervous system (CNS) and damage the health of individuals.

The American Psychiatric Association, in their Diagnostic and Statistical Manual of Mental Disorders, defined the PAS as ‘substances’ and the disorders related to their use as ‘substance-related disorders’. This classification is similar to that of the WHO ICD-10 measure.

The PAS can be of natural or artificial origin, they act directly and temporarily on the brain producing alterations in perception, sensations, and mood allowing for sensations of pleasure, euphoria, and relieving fear, pain, frustration, and distress. Despite the name psychoactive, the PAS also have an effect on other organs such as the heart, the intestines, blood vessels, and others.

Depending on how they are consumed, the PAS can interfere drastically on psychological and physical metabolism presenting various effects to the organism. These effects can depend on type and dosage of substance, duration of use, administration, personal characteristics of the user, expectations concerning the effects, and circumstances in which they are taken, in other words, the interaction individual-substance-social and cultural context. There are several phenomena related to use of PAS; in this sense, it is necessary to try to understand these phenomena to better deal with the matter of substance use.

The user is the person whose pattern of substance use is controlled; the abusive user is that whose pattern in out of control and excessive, and who can become an addictive user in cases of chemical, physical, or psychological dependency.

Chemical dependency is a clinical syndrome whose diagnosis is obtained in the presence of signs and symptoms that depend on the type of substance, and the manner and dosage related to its use. Chemical dependency is considered a chronic disease whose treatment is aimed at clinical improvement and reinsertion of the individual into the family and community settings. When the discontinuation of use of the substance is abrupt, the chemical balance of the user is affected due to the adaptation to the PAS, which characterizes the abstinence syndrome.

The abstinence syndrome is also related to the phenomenon of tolerance, which follows repeated and frequent use of specific substances. This results in the need for higher doses to obtain the desired effects. The greater the tolerance, the greater the effects. Tolerance to a PAS is dangerous since it can lead to overdose (PAS in doses that can lead to death).

Chemical dependency can also lead to escalation; this means a change from circumstantial consumption to frequent consumption in greater dosages, or a change from a ‘mild’ substance to another that is ‘heavier’. Escalation is also related to a pattern, related to the dependence, that presents a negative effect on the user’s social and affective relations.

One of the major problems of PAS consumption is differentiating users who are experimenting and circumstantial and those who will become dependent.

Different surveys have shown that the consumption of PAS is increasing, especially among youths who are increasingly exposed to supply and, thus, prematurely involved with improper use of the PAS. After alcohol, the most widely used substances by young populations are solvents, marijuana, anxiolitic agents, anorexigens, and cocaine. The consumption of alcohol is related to that of other PAS that are still used in Brazil, owing to the lack of public policies to contain abusive use.

**Classification of PAS according to CNS effect, frequency and use**

1. Considering the alterations in the psyche, according to Chalout, the PAS are classified as follows:
   - depressive: substances that decrease CNS activity, such as alcohol, anxiolitic agents (benzodiazepines), hypnotics (barbiturates), inhalants or solvents, narcotics (opiates and its derivatives);
   - stimulating: substances that increase CNS activity, such as amphetamines, anorexigens, caffeine, cocaine, tobacco;
   - disturbing: substances that present qualitative alterations to the CNS activities, such as hallucinogens (LSD, mescaline, mushrooms), cannabis (marijuana, hashish), anticholinergics, and ecstasy.

2. Considering the frequency of use and social, professional, school, affective, and family balance according to Helen Nowlis, users are classified as:
   - experimental user: experiments the substance for various reasons, such as curiosity, search for new experiences, peer pressure, etc;
adolescents may seek an
a) participating in a group: adolescents seek acceptance
of PAS by adolescents
conflict. Oliveira indicates some of the reasons for the use
behavior patterns; this, in turn, represents a situation of
family, and with society imposes the need to adopt new
need to establish a new relationship with oneself, with the
itself is a reason for experimenting, since the so-called

– frequent use: use at least six or more times in the past 30
days;
– monthly or recent use: use at least once in the past 30
months;
– yearly use: use at least once in the past 12 months;
– risk use: circumstantial, repeated or persistent pattern
of use; can result in high risk of future damage to
physical or mental health, but still has not resulted in
morbid organic or psychological effects. For example,
smoking 20 cigarettes per day may not present current
and real damages, but it is well-known that it represents
future risks;
– harmful use: pattern of use that has already caused
damages to physical and/or mental health.

3. Considering the type of use, according to the WHO,
the classifications are:
– use ever: use at least once in life;
– yearly use: use at least once in the past 12 months;
– monthly or recent use: use at least once in the past 30
days;
– frequent use: use at least six or more times in the past 30
days;
– risk use: circumstantial, repeated or persistent pattern
of use; can result in high risk of future damage to
physical or mental health, but still has not resulted in
morbid organic or psychological effects. For example,
smoking 20 cigarettes per day may not present current
and real damages, but it is well-known that it represents
future risks;
– harmful use: pattern of use that has already caused
damages to physical and/or mental health.

Involvement of adolescents with use and abuse of PAS

The use/abuse of PAS is a multicausal phenomenon that
can result from the need to feel pleasure, for acceptance, for
experimenting, to face fears, to prove one’s abilities, and to
search for answers in relation to existential matters, among
others.

In the case of adolescents, this particular stage in life
itself is a reason for experimenting, since the so-called
adolescence crisis, though normal, can represent risks. The
need to establish a new relationship with oneself, with the
family, and with society imposes the need to adopt new
behavior patterns; this, in turn, represents a situation of
conflict. Oliveira indicates some of the reasons for the use
of PAS by adolescents:

a) participating in a group: adolescents seek acceptance
and affirmation of their identity, sometimes use of a
psychotropic substance is required to be accepted;

b) finding pleasure in PAS: adolescents may seek an
escape from conflict and unsatisfactory situations by
using PAS, which can allow for new experiences and
sensations. However, the pleasure provided by using
PAS is usually restricted to the individual and his/her
body and can limit or hinder interaction with others;

c) playing with death: adolescents can seek dangerous
practices with the objective of testing their independence
and freedom and in the search for their affirmation as a
person who is becoming an adult;

d) breaking rules: adolescents commonly use PAS as an
means to show disobedience (in relation to society), to
test their parents’ authority, to break social rules and
values, and to deny rules, among others.

According to the WHO, there are certain situations that
predispose individuals to the use of PAS, such as lack of
information, poor health, dissatisfaction with quality of life,
easy access to drugs and family disintegration. The abusive
use of PAS can be considered a social problem, and the
presence of circumstances related to the use of PAS can
contribute to proliferation of abuse, which is a problem that
indistinctively affects all social classes.

PAS and their effects

As mentioned earlier, the effects of substances are not
uniform and depend on the interaction of three factors: the
individual, the substance, and the environment. It is important
to demystify the magical characteristic of drug use as the
sole cause of addiction to drugs.

The risks related to consumption of drugs depend on the
manner and circumstances in which they are used, and on
the type of substance. Even in the case of dependent users,
the dangers of PAS use are related to the level of dependence,
and not to the nature of the substance. There are no harmless
PAS, since the damage to one’s health depends on who uses
the PAS and how it is used. The legal substances do not
present less harmful effects than those considered illegal;
likewise, the natural PAS do not present less harmful effects
than those of the chemical ones. What can be said in this
respect is that there are less harmful ways to consume PAS,
though all can be dangerous. The signs and symptoms of
use/abuse of drugs, abstinence, and dependence are described
below.

Alcohol: nausea; vomiting; sweating; headaches;
dizziness; cramps; aggressiveness; euphoria followed by
depression; anxiety; loss of memory; loss of motor
coordination; effect on sexual performance; insomnia;
hallucinations; delirium; dementia; amnesia; involvement
of the hepatic functions. Use of alcohol allows for the
development of tolerance.

Nicotine: loss of appetite; sweating; dizziness;
headaches; insomnia; digestive, pulmonary (asbestosis,
emphysema, bronchitis), cardiovascular, and cerebral
problems.

Cannabis: tachycardia; conjunctival congestion;
increase or loss of appetite; euphoria followed by relaxation;
anxiety; insomnia; loss of memory; delirium; hallucinations;
and oligospermia.

Inhalants: aggressiveness; irritability; excitement;
shaking; dizziness; nausea; salivation; facial redness;
headaches; loss of motor and eye coordination; mental confusion; loss of conscience; and other neurological (seizures and coma) and cardiovascular (cardiac arrhythmia) problems. Use of inhalants allows for the development of tolerance.

Amphetamines: sweating; nausea; excitement followed by depression; insomnia; increase in cardiac frequency, in arterial pressure, and in respiration; mydriasis; shaking; motor hyperactivity; headaches; vertigo; delirium; hallucinations; anxiety; anorexia; effect on sexual performance. Use of amphetamines allows for the development of tolerance.

Tranquilizers: relieve anxiety and tension; sleepiness; loss of motor coordination; slowness of movements. Use of tranquilizers allows for the development of tolerance.

Cocaine: anorexia; nervousness; shaking; tonic-clonic seizures; major depression; anxiety; hallucinations; temporality loss; fatigue; insomnia; excitement and euphoria; hyperactivity; ecstasy; increase in arterial pressure, in respiration, and in cardiac frequency; coma. Use of cocaine allows for the development of tolerance.

Caffeine: insomnia; tachycardia; increase in secretion of gastric juice, shaking, headaches, anorexia, irritability. Use of caffeine allows for the development of tolerance.

Anabolics: hyperactivity and euphoria followed by irritability, anxiety, depression, mental confusion. In male patients, the use of anabolics can cause decrease in testosterone levels and testicular function; decrease in sperm count; impotence; infertility; balding; larger waist circumference; and gynecomastia. In female patients, it can cause appearance of facial hair; alteration or absence of menstrual cycle - amenorrhea; enlargement of the clitoris; alteration in the cartilage of the larynx; breast reduction; premature skeletal maturation; accelerated puberty.

Intervention in cases of use/abuse of PAS in adolescence

The Brazilian Child and Adolescent Statute from 1990 establishes that it is the duty of the family, the community, the society, and the government to ensure the rights to life and health. By this we understand that guiding and orienting individuals regarding the use of PAS requires a collective effort by stimulating the leading of a healthy life.

The inadequate use of PAS should be faced in a responsible manner aiming at 1) reducing risks for users (AIDS contamination); 2) reducing consumption, dependency, and problems resulting from drug abuse; 3) battling the supply of PAS.

One way to face the problem of substance abuse is by trying to keep individuals from getting involved with PAS; whereas for those who are already involved, the strategy is to help avoiding dependency and offer treatment options for dependent users.

In the following pages we will discuss intervention aimed at prevention and treatment of abuse.

Preventive approach

Considering that it is practically impossible to eliminate the supply of PAS, it is necessary to carry out preventive measures aiming at decreasing the stimulation of the use of PAS. At the same time, it is important to fund research projects and educational campaigns in order to achieve better understanding of social, physical, and psychological damage that follow from the use of these substances. It is understood that prevention is the best way to avoid drug abuse and decrease the prevalence of PAS by means of carrying out well-structured programs.

In general, preventive education should give emphasis to the balance between humankind and the environment. In this sense, it should allow for greater individual and collective compromise of youths as key social players and towards leading a healthier life. The professionals in the area of education and family members are the key players in carrying out this task; in addition to providing important information for youths, educators and relatives also represent important role models for young people.

A prevention program should be based on the triad individual, environment, and PAS. It should also promote the participation of all those involved with these three elements and be based on structured planning of strategies and periodical evaluations. In the case of adolescents, it is important to consider:

- stimulating the understanding of one’s self-image, developing self-esteem, self-confidence, and self-determination;
- strengthening critical judgment regarding use or abuse of PAS;
- encouraging participation in adequate social functions, stimulating social competence, social responsibility, and citizenship;
- forming groups of professionals that multiply, develop, and improve integrated preventive measures with emphasis on the community and culture.

Therapeutic approach

There are several different types of therapeutic approach, among which the most common are medical treatment, psychotherapy, self-help groups (Alcoholics Anonymous and others) and the therapeutic communities. There is no single mode of treatment that can comprehend all types of dependency, that is why research projects are being carried out in order to determine the specific conducts of each type of PAS-dependent patients. The medical-psychological approach has been reported very effective.

Most treatments focus on dependency. However, there are several users who present disorders related to abusive
use and who also require treatment. In the therapeutic approach, the diagnosis is aimed at determining, based on a collective effort between professional and patient, the current status of involvement with the substance, the environment in which the patient is inserted, and the consequences. This approach requires an understanding of the personal history, of the history of PAS use, and requires carrying out physical and psychological examinations. The participation of the family is fundamental for obtaining information and investigating factors that contribute to the consumption of PAS.27

After the diagnosis, the most adequate approach for cases of circumstantial or frequent users is to insist on quitting or reducing the use of PAS. In the case of dependent users, however, it is important to stimulate the participation in a therapeutic process. The establishment of trust between the multidisciplinary team and the patient is fundamental. From that point on, the process consists of establishing a therapeutic contract with objectives and modes of treatment.37 The treatment itself consists of detoxication in either outpatient or inpatient settings, depending on the case. Significant reduction or discontinuation of the use of PAS can cause symptoms of abstinence, which will require a drug treatment. This type of treatment, if possible, should be avoided since it can allow for multiple-substance abuse. During or after detoxication procedures, patients can be submitted to individual or group treatment.37 Group dynamics, talks, cultural and sports activities, support groups for the family, and audio and visual resources can be employed.38

When approaching the patient, the healthcare professional should be aware of the type of situation that has lead each individual to seek healthcare services, whether it was spontaneously or due to a crisis. As to what concerns the family, the professional should also be able to understand the reasons that lead the family members to seek help, and thus promote the involvement of all members in the therapeutic scheme.37

In most cases, treatment of dependency does not require hospitalization, except in cases of suicidal threat, self-destructive behavior, posing a threat to the physical integrity of others, psychiatric symptoms, clinical complications, dependency on other substances (alcohol detoxication), repeated failure of treatment in outpatient settings, lack of social support.27

Hospitalization is aimed at promoting abstinence at the beginning of the treatment and distance from the substance and the people or settings that stimulate its use. In these cases, a new day-to-day routine and a system of social support should be established. The emergencies in cases of chemical dependence are related to intoxication or abstinence. Cases of clinical complications, accidents, gun wounds, suicidal behavior, and violence are also commonly associated with dependency.27

Building a support network to battle against inadequate use of PAS

According to Bucher,39 some conducts can be characterized as adequate; the result of the conduct, however, depends on the views of the society in relation to users and their problems, whether it is judgmental or supportive, repressive or understanding. A positive attitude requires a broad-minded view on the matter, taking into consideration both the particularities of each situation and human values.39

Family

It is more important to act as ‘doers’, not ‘talkers’. An uncontrolled behavior pattern by parents and other related people can be imitated by adolescents, such as that involving the use of tranquilizers, drinking alcohol, smoking cigarettes, and so on.28

The family should be prepared for their children’s adolescence, allowing for their argumentative and rebellious behavior, providing support in situations of insecurity, stimulating their creativity, and establishing limits. Open and clear communication is at the basis of this harmonious coexistence, in which parents and kids communicate with each other and try to understand one another. The family can also teach adolescents to say no to drugs without feeling embarrassment in front of their friends.

School

School educational programs for the prevention of PAS use can be of significant help for adolescents, if carried out properly. Information provided at the school should not stimulate experimentation; it is also important to avoid anti-drug oppressive lecturing and repressive messages.

The use of PAS should be discussed within a broader scope, in which leading a healthy life comprehends physical, psychological, and social well-being. Educators should stimulate adolescents to critically think about leading healthy attitudes. When cases of involvement with PAS are identified, the school should not take drastic measures and should indicate the student to specialized services.28

Community

Drug addiction can result from the three-prong relationship of vulnerable individuals, PAS, and an environment that facilitates use of PAS. Before establishing preventive programs, it is recommended to carry out the diagnosis of PAS consumption in the community, the identification of the information and interest of the group on the matter and associated risk factors.

Considerations on preventive measures against use/abuse of PAS

1) the information provided should be objective, precise and direct without too much emphasis on risks and dangers;
2) parents and educators should provide proper guidance, showing possible risks without false morality or guilt; aggressive and desperate attitudes can end up by leading the adolescent to seek involvement with PAS;

3) the appeal of PAS should be neutralized by encouraging participation in artistic, sports, and playful activities - without, however, overstimulation;

4) adults should present an attitude that stimulates the formation of new values, the strengthening of ties, and that shows security and affection; this attitude should be aimed at helping youths to cope with difficulties such as feelings of loneliness, low self-esteem, lack of self-confidence, feelings of non-adaptation without having to resort to the use of Pas;

5) adults should also teach adolescents that the formula imposed by society of obtaining happiness at all costs is not the best way to lead one’s life;

6) adults should establish a communication with adolescents even in tense or conflict situations, since even in these complicated scenarios the adults play an important role to make adolescents communicate. If the adolescent does not communicate, it is important to seek outside help in people to whom the adolescent may listen (parents, family friends, priests, doctors or other professionals).

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References


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