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the SQUARE

healthcare bulletin

HIV and AIDS

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SEPTEMBER 2005 VOL 13 NO 3

IN THIS ISSUE:

"the SQUARE"

From the Desk of Managing Editor

Dear Doctor:

Hello again and welcome to this edition of "the *SQUARE*" healthcare bulletin!

Firstly we express our heartiest appreciation for your encouraging response regarding "the *SQUARE*" ! We have received about fifteen hundred readers' feedback regarding the last issue of this healthcare bulletin! Your inspirations motivate us to produce certain articles those are informative, and also entertaining.

In this issue we published a special feature on "HIV and AIDS" which has become a major worldwide epidemic. HIV (Human Immunodeficiency Virus) infection has now spread to every country in the world and has infected more than 40 million people worldwide as of the end of 2003. We have also focused on "Abdominal pain in children" that presents a diagnostic dilemma. The evaluation of a "tummy ache" can be challenging for both parents and the doctor. As both these conditions are very vast to describe, we condensed the best-published material on both the topics focusing only the essentials. In addition, our regular features include "Product profile" and "*SQUARE* in International Business".

Every effort has been made to make this issue interesting and we are quite sure that you will enjoy reading as well.

On behalf of the management of *SQUARE*, we wish you all a very blissful, healthy and successful life.

Omar Akramur Rab

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Key title: The *SQUARE* (Dhaka)
Abbreviated key title: *SQUARE* (Dhaka)

HIV and AIDS

AIDS poses an exceptional threat to humanity. It is unique in human history in its rapid spread, its extent and the depth of its impact. HIV is an extraordinary kind of a crisis. The first AIDS case was diagnosed in 1981. Now, more than 20 years later, 20 million people are dead and more than 40 million people worldwide are living with HIV. In 2003, an estimated 4.8 million people (range: 4.2-6.3 million) became newly infected with HIV and 2.9 million people are dead. Few communities recognized the danger ahead, and even fewer were able to mount an effective response. And still, AIDS spread relentlessly, destroying people's lives and in many cases seriously damaging the fabrics of societies.

The epidemic remains extremely dynamic, growing, and changing its character as the virus exploits new opportunities for transmission. The epidemic is vary from country to country even at country level, there are usually wide variations in infection levels between different provinces, states or districts, and between urban and rural areas. There is no room for complacency. Virtually no country in the world is AIDS free. Some countries that have let down their guard are seeing a renewed rise in numbers of people infected with HIV. In some industrialized countries, widespread access to antiretroviral medicines is fuelling a dangerous myth that AIDS has been defeated. At the rate it is currently spreading, HIV will have an increasingly serious impact into the foreseeable future, unraveling the fabrics of societies in its path.

Almost universally, mainstream society disapproves of, and sometimes harshly punishes, behavior such as illicit drug use, sex between men, and sex work. The societal disapproval has meant that people engaged in these behaviors are frequently ignored epidemiological surveillance systems, even though they are among the most likely to be exposed to HIV. Failure monitor what is going on among them inevitably means that efforts to respond to the epidemic will be out of step with what is required, and HIV will retain the upper hand. Countries that conduct comprehensive surveillance are more likely to have an accurate picture of their epidemic, and can better plan an effective response. Forthright national leadership, widespread public awareness and intensive prevention efforts have enabled entire nations to reduce HIV transmission.

AIDS EPIDEMIC IN ASIA

An estimated 7.4 million people in Asia are living with HIV. Around half a million are believed to have died of AIDS in 2003, and more than 1 million are thought to have newly infected with HIV. Among young people 15-24 years of age, 0.3% of women and 0.4% of men were living with HIV by the end of 2003. Epidemics in this region remain largely concentrated among injecting drug users, men who have sex with men, sex workers, clients of sex workers and their sexual partners. In South-East Asia, three countries in particular - Cambodia, Myanmar and Thailand - are experiencing particularly serious epidemics. Cambodia's national HIV prevalence is around 3% - the highest recorded in Asia.

Bangladesh: Bangladesh, the national adult prevalence is less than 0.1%, but there are significant levels of risky behavior. Large numbers of men continue to buy sex in greater proportions that elsewhere in the region. Moreover, most of the men do not use condoms in their commercial sex encounters and female sex workers report the lowest condom use in the region.

Among injecting drug users, 71% of those who do not participate in needle-exchange programs use non-sterile injecting equipment, compared with 50% of attendees in central Bangladesh programs, and 25% in north-west Bangladesh programs. Drug use in south-east Bangladesh appears to be on the rise. Surveys show that only about 65% of young people, fewer than 20% of married women, and just 33% of married men have even been heard of AIDS.

India: India has the largest number of people living with HIV outside South Africa. Most infections are acquired sexually, but a small proportion is acquired through injecting drug use. Injecting drug use dominates in Manipur and Nagaland in the north-east of the country, bordering Myanmar and close to the Golden Triangle. In this area, HIV infection levels of 60-75% have been found among injecting drug users using non-sterile injecting equipment.

In the southern states of Andhra Pradesh, Karnataka, Mahrashtra, and Tamil Nadu, HIV is transmitted mainly through heterosexual sex, and is largely linked to sex ▶

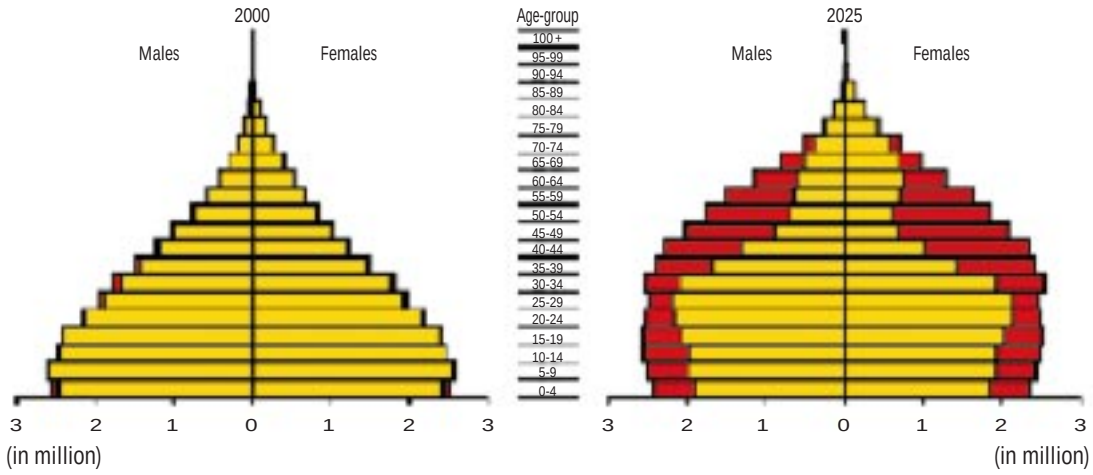
work. HIV transmission through sex between men is also a major risk factor in many areas of India. Recent research shows that many men who have sex with men have sex with women. In India, knowledge about HIV and AIDS is still scant and incomplete. AIDS awareness is very low among the rural women in Bihar, Gujarat and West Bengal.

MOBILITY AND SPREAD OF HIV

Human mobility has always been a major risk factor in the epidemics of HIV infection and AIDS. In Cameroon, a significant association was found between men's mobility and HIV infection was due to risky sexual behavior, there was no association between women's mobility and HIV infection. Across the Southern Africa, the phenomenon of men migrating to urban centers in search of work and leaving their partners and children at home in rural areas is widespread and has complex historical roots. In South Africa migration does play an important role in spreading HIV but revealed a more complex picture than had been expected, which challenge some basic assumptions. Looking at discordant couples (couples in which just one partner is HIV positive), it is found that nearly 30% of cases, the infected person was the female partner who stayed home in the rural area, while her migrant partner was HIV negative. Thus, migration may create vulnerability to HIV exposure at both ends of the trail, and the virus may be spread in both directions.

DEMOGRAPHIC IMPACT OF AIDS

Population size with and without AIDS, South Africa. 2000 and 2025



Red bars represent the hypothetical size of the population in the absence of AIDS. Yellow bars represent the actual estimated and projected population
Source: UN Population Division

Sub-Saharan Africa has the world's highest HIV prevalence and faces the greatest demographic impact. The probability of a 15-year-old dying before reaching age 60 has risen dramatically in that region. In some countries, up to 60% of today's 15-year-olds will not reach their 60th birthday. HIV's impact on adult mortality is greatest on people in their twenties and thirties, and is proportionately larger for women than men. In low- middle-income countries mortality rates for 15-49-year-olds living with HIV are 20 times more death rates for people living with HIV in Industrialized countries. This reflects the stark differences in access to antiretroviral therapy. ▶

Women are more vulnerable than men

HIV is not evenly distributed throughout national populations. It primarily affects young adults, particularly women. So, the AIDS epidemic is dramatically alerting heavily affected countries' demographic and household structure. The impact of AIDS on women is severe, particularly in areas of the world where heterosexual sex is the dominant mode of transmission. In sub-Saharan Africa, women are 30% more likely to be HIV-positive than men. The difference in infection levels between women and men is even more pronounced among young people. Population-based studies indicate that 15-24 year-old-African women, on average, are 3.4 times more likely to be infected than their male counterparts.

Risk from husbands and male partners

Marriage and other-long term, monogamous relationships do not protect women from HIV. In Cambodia, 13% of urban and 10% of rural men reported having sex with both a sex worker and their wife or steady girlfriend. Meanwhile, Cambodian national demographic data in 2000, showed that only 1% of married women used condoms during their last sexual intercourse with their husbands. In Thailand, study found that 75% of HIV-positive women were likely infected by their husbands. Nearly half of those women reported heterosexual sex with their husbands as their only HIV-risk factor. In some settings, it appears marriage actually increases women's HIV risk. In some African countries, adolescent, married 15-19-year-old females have higher HIV-infection than non-married sexually active females of the same age.

Violence & AIDS

HIV transmission risk increases during violent or forced-sex situations. The abrasions caused by forced vaginal or anal penetration facilitate entry of virus – a fact that is especially true for adolescent girls. Moreover, condoms are rarely used in such situations. In some countries, one in five women reported sexual violence by intimate partner, and up to 33% of girls reported forced sexual initiation.

Impact of HIV on women and girls

Women may hesitate to seek HIV testing or fail to return for their results because they are afraid that disclosing their HIV-positive status may result in physical violence, expulsion from their home or social ostracism. Young girls may drop out to school to tend to ailing parents, look after household duties or care for younger siblings. After a spouse's death, a mother is more likely than a father to continue caring his/her children, and a woman is more willing to take in orphans. Older women often shoulder the burden of care when their adult children fall ill. Later they may have to become surrogate parents to their bereaved grandchildren. AIDS-related stigma and discrimination often lead to the social isolation of older women caring for orphans and ill children, and deny them psychosocial and economic support. When their partners or fathers die of AIDS, women may be left without land, housing or other assets. In a Ugandan survey, one in four widows reported their property was seized after their partner died. A woman may also be prevented from using her property or inheritance for her family's benefit, which in turn hurts her ability to qualify for loans or agricultural grants. The denial of these basic human rights increases women's and girls' vulnerability to sexual exploitation, abuse and HIV.

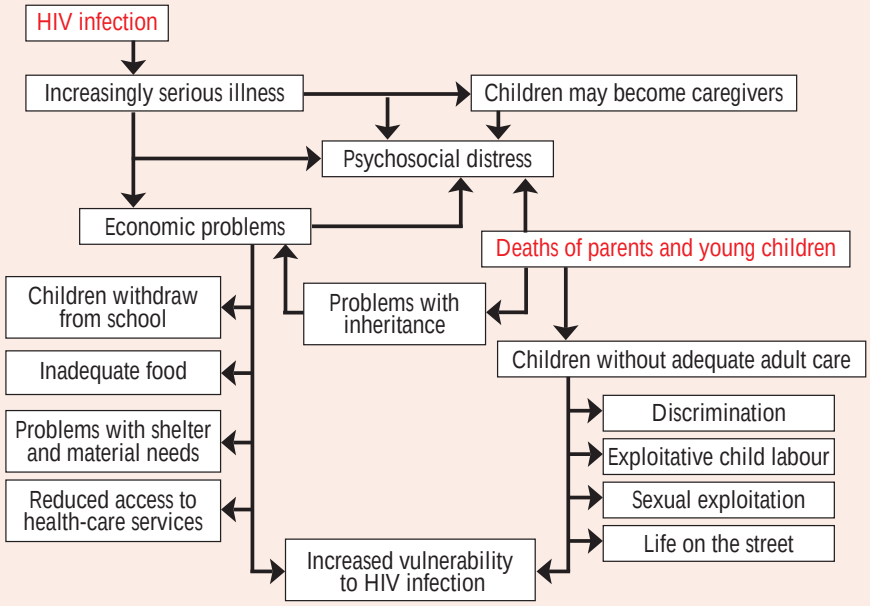
AIDS and orphans

Children orphan by AIDS are found in almost every country of the world. The number of orphans vary from country to country, in Africa there are millions children orphaned by AIDS. The age ranges of the orphans from a few days or months old to 18 years old. The worst orphan crisis is in sub-Saharan Africa, where about 12 million of children have lost one or both of their parents to AIDS. By 2010, this number is expected to climb to more than 18 million. The orphaned children experience emotional anguish as they watches their one or both parents die. The children's suffering is often compounded by being separated from their siblings. These experiences can lead to serious psychological problems such as post-traumatic stress syndrome, alcohol and drug abuse, aggression, and even suicide.

Poverty and social dislocation also add to an orphaned child's emotional distress. Factors such as loss of household incomes, the cost of treating HIV-related illnesses, and funeral expenses frequently leave orphaned children destitute. A parent's death also deprives them of the learning and values they need to become socially knowledgeable and economically productive adults. Recent research suggests that this intergenerational ▶

knowledge may play a part in a country's economic decline.

Problems among children and families affected by HIV and AIDS



Source: Williamson, J. (2004) *A Family is for Life*, USAID and the Synergy Project. Washington.

PREVENTION

Prevention is the mainstay of the response to AIDS. In the 2001 UN Declaration of Commitment on HIV/AIDS, countries around the world committed themselves to massively scaling up prevention programs. The declarations' goal is to reduce HIV prevalence among people (15-24 years old) by 25% in the most affected countries, and to reduce the proportion of infants infected with HIV by 20%, both by 2005.

Reduce vulnerability

Effective prevention requires policies that help reduce the vulnerability of large numbers of people- in effect, creating a social, legal and economic environment in which prevention is possible.

Initiatives that enhance economic and social development and empower women and girls also contribute to effective AIDS response. Such prevention-friendly efforts take many forms and can often be implemented by both public and private sectors.

Vulnerability to HIV exposure - an individual or community's inability to control their risk of infection - is multifaceted, comprehensive prevention intervention will be effective. Key elements in comprehensive HIV prevention include:

- AIDS education & awareness;
- Behavior change programs, especially for young people and populations at higher risk of HIV exposure, as well as for people living with HIV;
- Promoting male and female condoms as a protective option, along with abstinence, fidelity and reducing the number of sexual partners;
- Voluntary counseling & testing;
- Preventing and treating sexually transmitted infections;
- Primary prevention among pregnant women and prevention of mother-to-child transmission;
- Harm reduction programs for injecting drug users;
- Measures to protect blood supply safety;
- Infection control in health-care settings (universal precautions, safe medical injections, post-exposure prophylaxis);
- Community education and changes in laws and policies to counter stigma and discrimination; and
- Vulnerability reduction through social, legal and economic change.

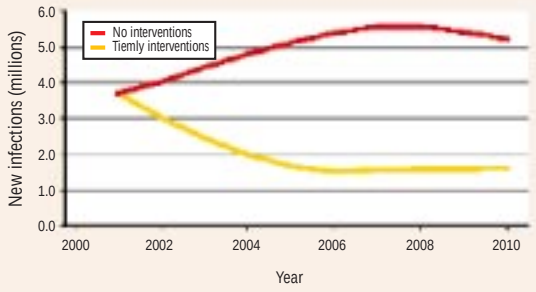
Prevention of sexual transmission through "combination prevention"

'Combination prevention' refers to the combination of strategies required to prevent sexual transmission. It includes various strategies that individuals can choose at different times in their lives to reduce their risks of sexual exposure to the virus. Countries that have achieved ▶

sustained progress against HIV transmission have pursued an array of complementary prevention approaches, from the 'ABC; options for preventing sexual transmission at individual level to the integration of prevention and care efforts. The ABC's of combination prevention means:

A means abstinence - not engaging in sexual intercourse or delaying sexual initiation. Whether abstinence occurs by delaying sexual debut or by adopting a period of abstinence at a later stage, access to information and education about alternative safer sexual practices is critical to avoid HIV infection when sexual activity begins or is resumed.

B means being safer - by being faithful to one's partner or reducing the number of sexual partners. The lifetime



Source: Stover et al. (2002). *Can we reverse the HIV/AIDS pandemic with an expanded response?* Lancet, 2002

number of sexual partners is a very important predictor of HIV infection. Strategies to promote faithfulness among couples do not necessarily lead to lower incidence of HIV unless neither partner has HIV infection and both are consistently faithful.

C means correct and consistence condom use - condoms reduce the risk of HIV transmission for sexually active young people, couples in which one person is HIV-positive, sex workers and their clients, and anyone engaging in sexual activity with partner who may have been at risk of HIV exposure.

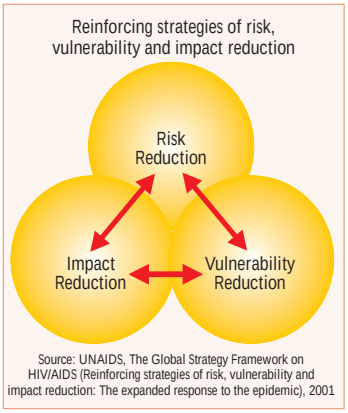
Brazil, Thailand and Uganda exemplify very different but effective responses: they emphasized getting the right combination of interventions to fit the specific risk factors and vulnerabilities that characterized the epidemic in each country.

AIDS education and awareness

Effective behavior change projects include educational and communications components, using a range of media, from traditional theatre and music, to global television and radio networks. Countries that have significantly reduced rates of new infections have typically invested heavily in AIDS education and awareness initiatives.

Programs to change HIV risk behavior and sustained healthy behavior

Behavior change and maintenance programs provide essential health information, motivate people to reduce risk and increase individuals' skills in using condoms and negotiating safer sex. Effective approaches for young people and children involve life-skills-based education that promotes the adoption of healthy behaviors. These include taking greater responsibility for their own lives, making healthy choices, gaining strength to resist negative pressures and minimizing harmful behaviors.



Source: UNAIDS, The Global Strategy Framework on HIV/AIDS (Reinforcing strategies of risk, vulnerability and impact reduction: The expanded response to the epidemic), 2001

Promoting condom use

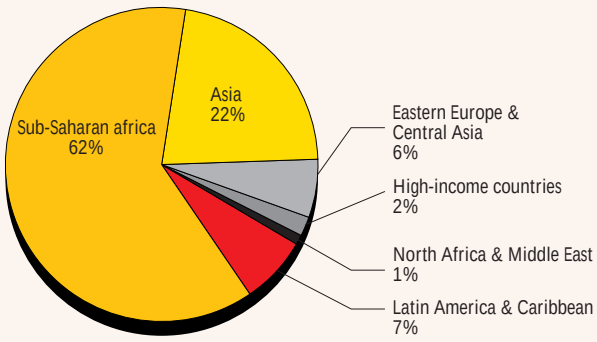
HIV prevention efforts have long focused on encouraging correct and consistent condom use as part of combination preventive strategy. Scientific data confirmed that male latex condoms are highly effective in preventing sexual HIV transmission. Evidence also indicates that the polyurethane female condom is comparably effective in protecting against sexual transmission.

Young people

Young people are a critical main focus for behavior change programs, since people 15-24 years old make up an estimated one-half of all new infections. However, young people in different parts of the world face different kinds of risks, and prevention programs must be designed accordingly. Such as, children who do not attend school are very different from those in school. In countries where injecting drug use poses a higher risk of HIV transmission, ▶

the curricula for life skills training have to be adjusted accordingly.

Young people (15-24 years old) living with HIV, by region, end 2003



Total: 10 million

Source: UNAIDS/UNICEF/WHO, 2004

Women and girls

Starting young is central to most prevention strategies, and one of the best means of protecting girls from HIV exposure is to keep them in school. In line with the international initiative 'Education for All' three key action lines have been identified as being central to the education sector response to HIV and girls:

1. Girls should be got into school, and a safe environment should be ensured that can keep them at school and learning.
2. It should be ensured that HIV prevention education is provided as part of the overall quality education that all children and young people deserve.
3. Special measures must be ensured for those not in schools to extend the definition of education well beyond schools alone, and to consider the needs of working children, street children, and those who are exploited or made vulnerable by poverty and poor living conditions.

As girls grow older, other prevention activities become increasingly important. Reducing women's vulnerability to HIV must address a variety of gender-related legal, social and economic disadvantages.

Married and cohabiting couples

Married and cohabiting couples have sex more frequently than people who are not living together, but they use condom less often. Some of the low condom use is certainly due to trust, but it also reflects women's lack of power to negotiate safer sex, even when a woman suspects her husband has engaged in high-risk sex either before or during the marriage. A 1999 study in Thailand found that although three-quarters of HIV-infected women were most probably infected by their husbands, nearly half thought they were at no or low risk for HIV infection. Sex with their husband was the only HIV risk factor reported by these women.

Increasing knowledge of HIV status by voluntary counseling and testing services for couples and assist partners to talk about sex and plan to reduce their risk may help to prevent HIV transmission in this group of people.

Men who have sex with men

This population accounts for 5-10% of all HIV cases worldwide. In many countries men who have sex with men typically do not self-identity as gay, homosexual or bisexual. Men who have unprotected sex with men may also have unprotected sex with women and thus serve as an epidemiological bridge to the broader population. Prevention programs must take into account the fact that this group is highly stigmatized throughout much of the world. Peer-based interventions that target social networks of men who have sex with men can be highly effective in promoting risk reduction.

Sex workers

HIV prevalence is generally high among sex workers than in general population. Rising high levels of HIV among sex workers can provide early warning of increasing probability that the epidemic will expand into the general population. The most effective prevention programs for sex workers include condom distribution, access to diagnosis and treatment of sexually transmitted infections and HIV, counseling and other services. Prevention programs for sex workers are highly cost-effective, and the sex workers can be strong partners in prevention if programs are based on recognizing their human rights. Acknowledging the broad diversity of sex workers is important in creating effective prevention. In addition to women, sex workers can be male or transgender, young or old, and work in a range of setting from highly organized brothels to roadside bars and the street. ▶

Prisoners

At any given time, there are about 10 million people imprisoned worldwide. This has a serious implication for the global epidemic, since prisons and other custodial settings are breeding grounds for infectious diseases including HIV, tuberculosis, and hepatitis. HIV transmission is common in prisons, including injecting drug use, tattooing, male-male sexual relations and violence including rape. Many EU countries now provide free access to condoms, substitution treatment, and needle and syringe programs in prisons.

Migrant workers and mobile populations

There is strong link between various kinds of mobility and heightened risk of HIV. There is a widespread prejudice that migrants 'bring AIDS with them' the fact is that many migrants from low HIV prevalence areas to those with higher prevalence, increasing their own risk of being exposed to the virus. The wide variety of conditions facing migrants requires that HIV prevention be carefully tailored to the specific circumstances of different groups. On a global level, there is increasing attention on prevention among mobile populations that regularly cross international borders such as truck drivers, traders and sex workers.

Injecting drug users and their sex partners

In recent years, transmission among injecting drug users has been responsible for the world's fastest spread of HIV infection. A combination of interventions can prevent and even reverse major epidemics among injecting drug users. Cities such as London and Dhaka have managed to keep HIV prevalence among injecting drug users to less than 5%. The best responses are built on the three pillars of supply reduction, demand reduction and harm reduction. A range of programming options should be used: discouraging people from using drugs, making treatment available to users, providing appropriate substitution therapies and making sure that clean needles and condoms are available. To control the further expansion of the epidemic, intervention measures should be taken for the sex partners of injecting drug users.

HIV testing

The current reach of HIV testing services is poor and uptake is often low, largely because of fear of stigma and discrimination. Public health strategies to increase knowledge of HIV status and human rights protection are mutually reinforcing and should be integrated for greatest effect in reducing HIV transmission and improving quality of life of people living with HIV. The '3 Cs' are the underpinning principles advocated since HIV testing of individuals began in 1985. They are:

1. Confidentiality
2. Testing accompanied by counseling
3. Testing only with informed consent, meaning that it is voluntary.

Diagnostic HIV testing is indicated whenever a person shows signs or symptoms that are consistent with HIV-related disease, including tuberculosis, to aid clinical diagnosis and management. A routine offer of HIV testing by health-care providers should be made to all patients in:

- Sexually transmitted infection clinics - to facilitate tailored counseling based on knowledge of HIV status;
- Maternal and child health clinics - to permit antiretroviral prevention of mother-to-child transmission;
- Health-care-settings where HIV is prevalent and antiretroviral treatment is available eg injecting drug use treatment services, hospital emergencies, and internal medicine hospital wards, etc.

Prevention and treatment of sexually transmitted infections

Preventing, diagnosing and treating sexually transmitted infections are essential components of an effective HIV prevention strategy. Untreated sexually transmitted infections dramatically increase the risk of HIV transmission through unprotected sex. Most of these infections can be prevented by using condoms and seeking medical treatment early.

Preventing mother-to-child transmission

In 2003, an estimated 630000 children worldwide became infected with HIV, (and 490000 children have died of AIDS-related causes) – the vast majority of them during their mother's pregnancy, labor and delivery, or as a result of breastfeeding. In industrialized countries, HIV transmission to infants is rare due to antiretroviral prophylaxis, cesarean delivery and alternatives to breastfeeding. Transmission rates below 2% can be achieved in non-breastfeeding populations in resource- ▶

constrained settings with a combination of zidovudine from 28 weeks of pregnancy, supplemented by a single dose of nevirapine at the onset of labor for the mother and a single dose of nevirapine and a week of zidovudine for the newborn.

HIV transmission in health-care settings

According to the WHO, blood transfusions may account for 5-10% of all cumulative infections worldwide. Mandatory screening of donated blood, relying on low-risk donors, and promoting appropriate clinical use of transfused blood - decline the incidence of transmission significantly. An estimated 5% of new infections worldwide stem from using unsterilized needles or syringes in hospital or clinic settings. UNICEF, WHO, and UNFPA recommend that all countries should use only auto-disable syringes for immunizations. The Global Alliance for Vaccines and Immunizations partnership supports the widespread introduction of auto-disable syringes safety boxes for safe disposal of injection equipment.

To prevent transmission of HIV or other blood-borne disease, health-care workers should adhere to 'universal precautions', an approach that assumes all individuals are potentially infectious. This require wearing gloves when exposure to any body fluid is possible, and using gowns, masks and goggles if splattering is likely.

TREATMENT, CARE AND SUPPORT

Access to antiretroviral treatment and other HIV-related disease care remains very low. Five to six million people in low- and middle-income countries need antiretroviral treatment immediately. But, according to WHO, only 400000 people had access to it, at the end of 2003.

The '3 by 5' Initiative

In September 2003, a crucial development occurred at the 2nd UN General Assembly Special Session on HIV/AIDS. The Director General of WHO and Executive Director of UNAIDS declared the lack of treatment in low- and middle-income countries a global public health emergency and launched the *'3 by 5' (Treating 3 million by 2005 – Making it happen) Initiative*.

Reducing complexity is a major factor in accelerating the roll-out of treatment in areas with weak health-care systems and severe shortages of trained health professionals. The '3 by 5' have recommended a simplified, standard regimen for treatment. According '3 by 5' regimens are simple and pills are fewer (four), and the four combinations cover a variety of circumstances including co-infection with tuberculosis, and pregnancy. Twice-a-day regimens increase patients' compliance, and improve patients' quality of life, decrease the opportunity for drug resistance. Rapid and simplified laboratory procedure is the prerequisite for effective treatment in poorest countries.

Antiretrovirals are not a permanent cure, but reducing viral load, they can extend the lives of people living with HIV by years. Triple combination antiretroviral therapy has long been the standard for treating HIV infection. Fixed-dose combinations permit all three individual molecules to be taken in one tablet, capsule or, in the future, a solution which is of special important for children. The most widely prescribed fixed-dose combinations [Stavudine (d4T)/Lamivudin (3TC) Nevirapine (NVP)] are able to take one pill two times a day.

Fixed-dose combination antiretrovirals offer a number of possible advantages. They can:

- ❏ increase patient adherence to treatment;
- ❏ delay the development of resistance;
- ❏ lower the total cost, including production, storage, transport, dispensing and other health system costs;
- ❏ reduce the risk of medication errors by prescribers, dispensers and patients themselves;
- ❏ simplify supply-system functioning and increase security; and
- ❏ facilitate patient counselling and education, and reduce waiting time for patients.

Palliative care: It is estimated that at least half of all HIV patients will suffer severe pain in the course of the disease. Pain relief is an essential part of care, WHO has produced guidelines indicating that opiates, including oral morphine, are necessary to relieve suffering. Besides pain control, palliative care for people with AIDS encompasses:

- ◆ Treatment of other symptoms such as diarrhea, nausea, vomiting, coughing, shortness of breath, ▶

fatigue, fever, skin problems and mental impairment;
- Psychological support, including relieving depression, anxiety and spiritual pain; and
- Support for families and carers, including practical assistance with nursing, respite care and counseling to help them work through their emotions and grief.

Tuberculosis and HIV: In many countries where AIDS has hit hardest, tuberculosis is the leading cause of death in people living with HIV. The greatest impact of HIV on tuberculosis has been in sub-Saharan Africa, where up to 70% of tuberculosis patients are also infected with HIV. People with latent tuberculosis infection can be provided with isoniazid preventive therapy. Patients with active tuberculosis can be treated with six months of anti-tuberculosis medicines. Additionally, cotrimoxazole helps to prevent HIV related opportunistic infections, reducing the risk of death in people with both tuberculosis and HIV. In addition, intensifying tuberculosis case finding in HIV testing and counseling centers and in other HIV service outlets is essential.

Nutritional support: Good nutritional support play an important role in helping people with HIV stay healthy, in counteracting physical wasting due to HIV infection and boosting energy levels.

Community support: Almost universally, relatives and friends provide up to 90% of care for AIDS patients within home. Many community-based programs, often with few links to public health services, have sprung up around the world to support their effort. Supportive environment for the carers, which means female properties, inheritance rights, as well as guidelines that regulate their lives should be properly maintained. It also means working on structural issues such as providing clean water and sanitation, shelter, education for girls, employment, old age pensions and other social security nets.

AIDS AND HUMAN RIGHTS

AIDS responses are scaled up worldwide. The need to be grouped in sound public health practice and they also need to respect, protect and fulfill human rights norms and standards. This is particularly important when it comes to HIV testing as a prerequisite for expanded access to treatment.

Ensuring a rights-based approach

The concept that HIV testing must remain voluntary is at the heart of all HIV policies and programs. Voluntary testing complies with human rights principles and ensures sustained public health benefits. The following mutually reinforcing key factors need to be addressed simultaneously:

1. Ensuring an ethical process for conducting the testing: this includes defining the purpose of the test and benefits to the individuals being tested and assuring there are links between the site where the test is conducted and relevant treatment, care and other services. Furthermore, testing needs to take place in an environment that guarantees confidentiality of all medical information.
2. Addressing the implications of a positive test result: people who test HIV-positive should not face discrimination and should have access to sustainable treatment.
3. Reducing AIDS-related stigma and discrimination at all levels, notably within health-care settings.
4. Ensuring a supportive legal and policy framework for scaling up the response, including safeguarding the human rights of people seeking AIDS-related services.
5. Ensuring that health-care infrastructure is adequate to address the above issues and that there is enough trained staff to meet the increased demand for testing, treatment and related services.

Reappearance of restrictive policies and laws

In recent years, a number of policies and laws have emerged that restrict the human rights of people living with HIV or AIDS, or those assumed to be infected.

Experience has confirmed that protecting people's human rights decreases their vulnerability to HIV and reduces the negative impacts of HIV and AIDS. Much progress has been achieved, but the world now needs to be vigilant to prevent backsliding toward practices that are not rights-based.

Reference:

2004 Report on the Global AIDS Epidemic; UNAIDS

Abdominal Pain in Children

Abdominal pain in children is a very common problem encountered by physicians, surgeons and medical subspecialists. It is one of the most common reasons parents bring children to a hospital's emergency department. By some estimates, about 10-15% of children between the ages of 4 and 16 years will complain of abdominal pain on weekly or even daily basis.

Abdominal pain can be acute pain or it can be chronic. Associated factors can help determine the cause of abdominal pain. The exact location of the pain can also be helpful, as well as how long the pain lasts, what makes it better and what makes it worse. Children with acute pain and associated symptoms can usually be easily diagnosed with illnesses such as appendicitis, gastroenteritis, or constipation. It becomes more difficult and frustrating when children have chronic or recurrent abdominal pain and no other symptoms and a normal physical exam. These children are usually thought to have functional abdominal pain, which may be secondary to stress or having hypersensitive reactions to the normal actions of their intestines. Fortunately, about 30-50% of children with functional abdominal pain will get better with no intervention in 2-6 weeks after they are diagnosed. It is important to note that although no organic or medical cause for the pain has been found for children with functional abdominal pain, that doesn't mean that is not real or that the child is making it up.

PATHOPHYSIOLOGY

Clinically, abdominal pain falls into three categories: visceral (splanchnic) pain, parietal (somatic) pain, and referred pain. Visceral pain occurs when noxious stimuli affect a viscus, such as the stomach or intestines. Tension, stretching, and ischemia stimulate visceral pain fibers. Tissue congestion and inflammation tend to sensitize nerve endings and lower the threshold for stimuli. Because visceral pain fibers are bilateral and unmyelinated and enter the spinal cord at multiple levels, visceral pain usually is dull, poorly localized, and felt in the midline. Pain from foregut structures (e.g., lower esophagus, stomach) generally is felt in the epigastrium. Midgut structures (e.g., small intestine) cause periumbilical pain, and hindgut structures (e.g., large intestine) cause lower abdominal pain. Parietal pain arises from noxious stimulation of the parietal peritoneum. Pain resulting from ischemia, inflammation, or stretching of the parietal peritoneum is transmitted through myelinated afferent fibers to specific dorsal root ganglia on the same side and at the same dermatomal level as the origin of the pain.

Parietal pain usually is sharp, intense, discrete, and localized, and coughing or movement can aggravate it. Referred pain has many of the characteristics of parietal pain but is felt in remote areas supplied by the same dermatome as the diseased organ. It results from shared central pathways for afferent neurons from different sites. A classic example is a patient with pneumonia who presents with abdominal pain because the T9 dermatome distribution is shared by the lung and the abdomen.

ETIOLOGY

- *Infantile colic:* Colic usually occurs in infants between the ages of 10 days and 3 months of age. While no one knows exactly what causes it, colic seems to produce rapid and severe contractions of the intestine, which probably are responsible for the baby's pain. The discomfort often is more severe in the late afternoon and early evening and may be accompanied by inconsolable crying, pulling up of the legs, frequent passage of gas and general irritability. Typically, infants with colic scream, draw their knees up against their abdomen, and appear to be in severe pain.
- *Gastroenteritis:* Gastroenteritis is the most common cause of abdominal pain in children. Viruses such as rotavirus, Norwalk virus, adenovirus, and viruses or bacteria can cause abdominal pain, as seen in typical stomach flu or gastroenteritis. Viral causes require no treatment and will resolve on their own over a week or so, while bacterial infections may need an antibiotic to get better.

- *Constipation:* Constipation often is blamed for abdominal pain, but it's rarely a problem in younger infants. Older babies who have started solid foods; however, do sometimes become constipated and may experience abdominal discomfort while having a bowel movement. Acute constipation usually has an ▶

organic cause (e.g., gastroenteritis, appendicitis), while chronic constipation usually has a functional cause (e.g., low-residue diet). Abdominal pain resulting from constipation is most often leftsided or suprapubic.

- *Intussusception:* Intussusception is a rare cause of abdominal pain in young infants, usually occurring in the first year of life. The child will intermittently and abruptly cry and pull legs toward stomach. This will be followed by periods without pain, often without any distress.
- *Mesenteric lymphadenitis:* Mesenteric lymphadenitis often is associated with adenoviral infection. The condition mimics appendicitis, except the pain is more diffuse, signs of peritonitis often are absent, and generalized lymphadenopathy may be present.
- *Food related:* Food poisoning, which acts like a stomach flu, food allergies, excess food ingestion, and gas production all can cause bloating and temporary discomfort.
- *Poisoning:* This can range from simple problems such as eating soap to more serious issues such as swallowing iron pills.
- *Surgical problems:* These include appendicitis and blockage of the bowels. Appendicitis is the most common surgical condition in children who present with abdominal pain. Approximately one in 15 persons develops appendicitis. Lymphoid tissue or a fecalith obstructs the appendiceal lumen, the appendix becomes distended, and ischemia and necrosis may develop. Patients with appendicitis classically present with visceral, vague, poorly localized, periumbilical pain. Within six to 48 hours, the pain becomes parietal as the overlying peritoneum becomes inflamed; the pain then becomes well localized and constant in the right iliac fossa. Intestinal obstruction produces a characteristic cramping. Causes of intestinal obstruction include volvulus, intussusception, incarcerated hernia, and postoperative adhesions.
- *Abdominal trauma:* Abdominal trauma can be accidental or intentional. Blunt abdominal trauma is more common than penetrating injury. Abdominal trauma may cause musculocutaneous injury, bowel perforation, intramural hematoma, laceration or hematoma of the liver or spleen, and avulsion of intra-abdominal organs or vascular pedicles.
- *Pelvic inflammatory disease:* Pelvic inflammatory disease usually is caused by *Chlamydia trachomatis* or *Neisseria gonorrhoea*.
- *Medical causes:* Things outside the abdomen can cause pain there. For example, a child can have abdominal pain with diabetic problems or with a black widow spider bite.

Causes of Acute Abdominal Pain in Children

Gastrointestinal causes	Genitourinary causes	Drugs and toxins
Gastroenteritis	Urinary tract infection	Erythromycin
Appendicitis	Urinary calculi	Salicylates
Mesenteric lymphadenitis	Dysmenorrhea	Lead poisoning
Constipation	Mittelschmerz	Venoms
Abdominal trauma	Pelvic inflammatory disease	Pulmonary causes
Intestinal obstruction	Threatened abortion	Infantile colic
Peritonitis	Ectopic pregnancy	Functional pain
Food poisoning	Ovarian/testicular torsion	Pharyngitis
Peptic ulcer	Endometriosis	Angioneurotic edema
Meckel's diverticulum	hematocolpos	Familiar Mediterranean fever
Inflammatory bowel disease	Metabolic disorders	
Lactose intolerance	Diabetic ketoacidosis	
Liver, spleen, and biliary tract disorders	Hypoglycemia	
	Porphyria	
	Acute adrenal insufficiency	
Hepatitis	Hematologic disorders	
Cholecystitis	Sickle cell anemia	
Cholelithiasis	Henoch-Schonlein purpura	
Splenic infarction	Hemolytic uremic syndrome	
Rupture of the spleen		
Pancreatitis		

CLINICAL EVALUATION

In evaluating children with abdominal pain, a thorough history is required to identify the most likely cause. An initial evaluation of the history is followed by a physical examination and a reassessment of certain points of the history. ▶

History

Age of Onset: Age is a key factor in the evaluation of abdominal pain.

Pain History: The location of the pain is defined by the specificity. The child may indicate the location of the pain by pointing with one finger or with the whole hand. Apley's1 observation that "the further the pain from the umbilicus, the greater the likelihood of organic disease" has held up well. Children may rate the intensity of the pain on a scale of 1 to 5 or 1 to 10 or, for younger children, by pointing to a series of faces graded from smile to frown to tears. Since children may not understand such definitions of character as ”burning”, “sharp” or “dull”, it is best to phrase questions about the nature of the pain at their level of understanding. Some examples of questions might be, "Does it hurt like a needle? Does it feel like butterflies in the stomach? Does it help to eat? Does it help to lie down or to poop?”

Night pain or pain on awakening suggests a peptic origin, while pain that occurs in the evening or during dinner is a feature of constipation. Children often deny heartburn, but other features of peptic disease include early satiety, nausea and the complications of gastroesophageal reflux. A diary that lists diet, symptoms and associated features for three to seven days is invaluable since it will indicate potential causes of the symptoms, such as exposure to lactose or the failure to have a normal bowel movement. The diary also should include any interventions initiated by the child or the parents.

The family history of peptic disease, irritable or inflammatory bowel disease, pancreatitis, biliary disease or migraine is determined. The influence of pain on the child's daily activity is assessed through questions about school attendance, athletic endeavors and peer relationships. Whenever possible, a few minutes should be taken alone with adolescents to address concerns in the absence of parents and to elicit honest answers about sexual issues, psychologic fears and the disruptions to lifestyle caused by the parents' interventions.

Children who do not verbalize typically present with late symptoms of disease. Children up to the teenage years have a poor sense of onset or location of pain. The classic sequence of shifting pain usually occurs with appendicitis. In children who cannot verbalize, the initial 24-hour history of vague nausea or periumbilical pain may be unreported or go unnoticed, so these children more often present at the second stage of more visceral pain. However, any child with pain that localizes to the right lower quadrant should be suspected of having appendicitis. Thus, inquiry into the location, timing of onset, character, severity, duration, and radiation of pain are all important points but must be viewed in the context of the child’s age.

Recent Trauma: A history of recent trauma may indicate the cause of pain.

Precipitating or Relieving Factors: Parietal pain is aggravated by movement. Relief of pain after a bowel movement suggests a colonic source, and relief after vomiting suggests a source in the more proximal bowel.

Associated Symptoms: The review of systems will focus on features that may be related to abdominal pain, such as documented weight loss or gain, height growth, fever, joint complaints and rash. The presence of one or more of these signs suggests an inflammatory or infectious disease process.

In the acute surgical abdomen, pain generally precedes vomiting, and the reverse is true in medical conditions. Any child presenting with bilious vomiting should be presumed to have a bowel obstruction. Diarrhea often is associated with gastroenteritis or food poisoning, but it also can occur with other conditions. Bloody diarrhea is much more suggestive of inflammatory bowel disease or infectious enterocolitis. The classic “currant-jelly stool” often is seen in patients with intussusception. Failure to pass flatus or feces suggests intestinal obstruction. Urinary frequency, dysuria, urgency, and malodorous urine suggest a urinary tract infection. Purulent vaginal discharge suggests salpingitis. Cough, shortness of breath, and chest pain point to a thoracic source. Polyuria and polydipsia suggest diabetes mellitus. Joint pain, rash, and smoke-colored urine suggest Henoch-Schönlein purpura.

The respiratory complications of gastroesophageal reflux, including chronic cough, reactive airway disease or persistent laryngitis, may be more prominent than emesis or chest pain.

Gynecologic History: In girls, a thorough gynecologic history, including a menstrual history and a history of sexual activity and contraception, is essential. ▶

Amenorrhea may indicate pregnancy. A history of multiple sexual partners and the use of an IUD suggest PID. Use of an IUD and a history of PID or tubal ligation increase the risk of ectopic pregnancy. Sudden onset of midcycle pain of short duration suggests mittelschmerz.

Past Health: All previous hospitalizations or significant illnesses such as sickle cell anemia and porphyria should be noted. A history of surgery not only can eliminate certain diagnoses but also can increase the risk of others, such as intestinal obstruction from adhesions. A history of similar pain may suggest a recurrent problem.

Drug Use: A detailed drug history is important, because certain drugs may cause abdominal pain. A careful review of recent medications will indicate whether the pain may respond to empiric therapy; for example, antibiotics may predispose the patient to intestinal bacterial overgrowth, acne medications may induce esophagitis and tricyclic antidepressants may cause constipation.

Family History: A family history of sickle cell anemia or cystic fibrosis may indicate the diagnosis. The patient's ethnic background is important because sickle cell anemia is most common in blacks of African origin.

Five Components of the Evaluation of Children with Abdominal Pain

1. History
- ❏ Location, intensity, character and duration of pain, time of day or night that pain occurs
- ❏ Appetite, diet, satiety, nausea, reflux, emesis
- ❏ Stool pattern, consistency, completeness of evacuation
- ❏ Review of systems: weight loss, growth or pubertal delay, fever, rash
- ❏ Medications and nutritional interventions
- ❏ Family history, travel
- ❏ Interference with school, play, peer relations and family dynamics

2. Physical examination
- ❏ Weight, height, growth velocity, pubertal stage, blood pressure
- ❏ Complete physical examination
- ❏ Objective abdominal findings: location, rebound, mass, psoas sign
- ❏ Liver, spleen and renal size, ascites, flank pain
- ❏ Perianal findings: rectal and pelvic examinations, stool testing for occult blood

3. Laboratory tests
- ❏ Complete blood count with differential, erythrocyte sedimentation rate
- ❏ Urinalysis and urine culture
- ❏ Laboratory tests individualized according to indication
  - -- Stool testing and culture for polymorphonuclear leukocytes, parasites, Giardia antigen
  - -- Serum chemistry profile, amylase level
  - -- Pregnancy test, cultures for sexually transmitted diseases
  - -- Breath hydrogen test: lactose, fructose
  - -- Serologic testing for amebae, *Helicobacter pylori*

4. Imaging studies individualized according to indication
- ❏ Abdominal and pelvic sonography
- ❏ Upper gastrointestinal contrast study with small bowel testing, abdominal computed tomography
- ❏ Upper endoscopy, colonoscopy, laparoscopy

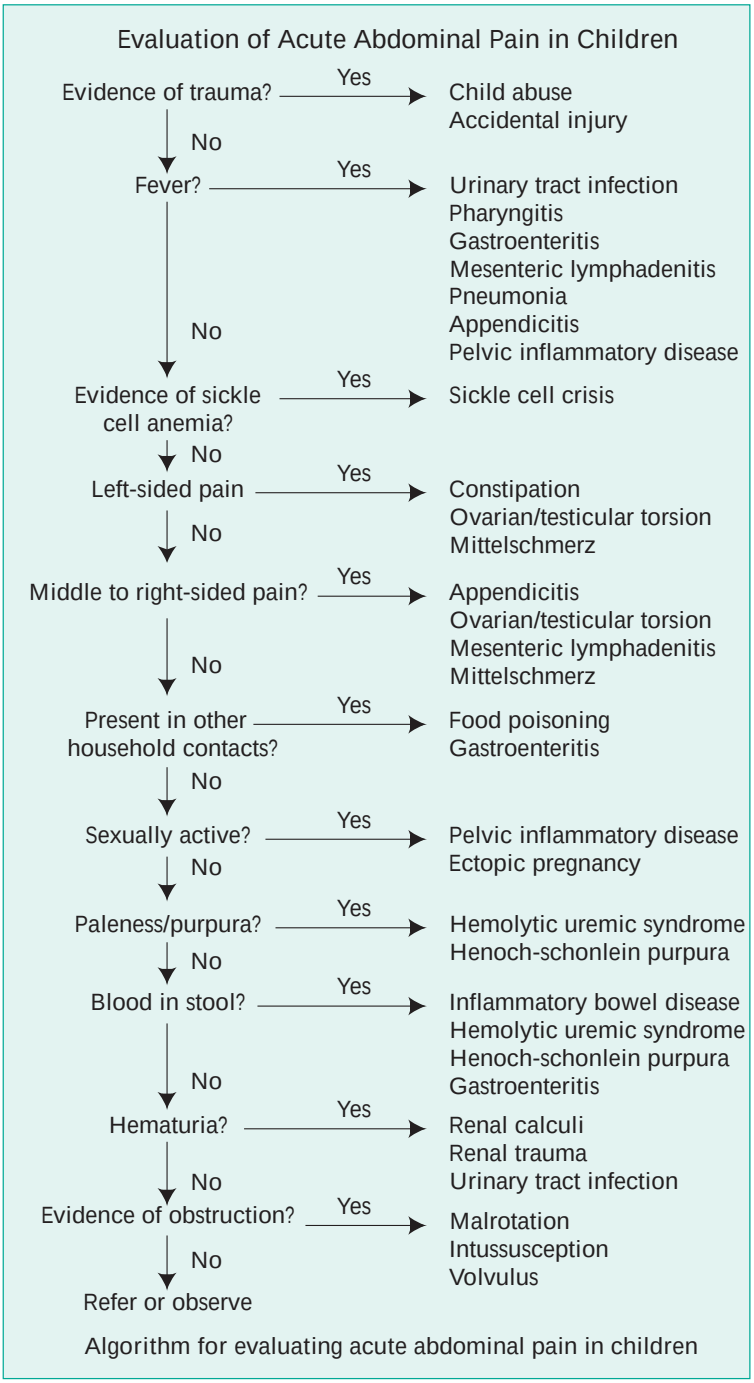
5. Empiric interventions
- ❏ Patient and parent education
- ❏ Symptom diary of pain, bowel pattern, diet and associated features, response to intervention
- ❏ Constipation investigated as a factor
- ❏ Dietary interventions, including adjusted fiber intake, reduced lactose intake, reduced juice intake
- ❏ Trial of peptic management

Physical Examination

General Appearance: In general, children with visceral pain tend to writhe during waves of peristalsis, while

children with peritonitis remain quite still and resist movement. The hydration status of the child should be assessed. Because of the interaction between abdominal pain, nutrition and demands of growth, the anthropometric data of weight, height and growth velocity ▶

are documented. Weight-for-height is plotted to assess malnutrition or obesity. The examination is generally completed before focus on the abdomen is initiated.



Algorithm for evaluating acute abdominal pain in children

Vital Signs: Fever indicates an underlying infection or inflammation. High fever with chills is typical of pyelonephritis and pneumonia. Tachycardia and hypotension suggest hypovolemia. If a postmenarcheal girl is in shock, ectopic pregnancy should be suspected. Hypertension may be associated with Henoch-Schönlein purpura or hemolytic uremic syndrome. Kussmaul's respiration indicates diabetic ketoacidosis.

Abdominal Examination: The breathing pattern should be observed, and the patient should be asked to distend the abdomen and then flatten it. If abdominal distention is reported, the abdominal girth at the umbilicus should be documented. After the child is asked to indicate, with one finger, the area of maximal tenderness, the abdomen should be gently palpated, moving toward (but not palpating) that area. Evaluation of Rovsing's sign and psoas sign; percussion of liver spun and evaluation of the size of spleen and kidney should be done. Gentle percussion best elicits rebound tenderness. Deeper palpation is necessary to discover masses and organomegaly. Abdominal and rectal examinations will identify constipation, the inflammatory mass of Crohn's disease, abdominal tumors such as neuroblastoma or Wilms' tumor and the presence of umbilical or abdominal wall hernias.

Rectal and Pelvic Examination: These examinations should be used when significant information is sought or expected. A rectal examination may provide useful information about tenderness, sphincter tone, and presence of masses, stool, and melena. In boys, examination of the external genitalia may reveal penile and scrotal abnormalities. In girls, it may reveal vaginal discharge, vaginal atresia, or imperforate hymen. The pelvic examination may suggest gynecologic problems, such as endometriosis, ectopic pregnancy or ▶

ovarian cysts or torsion. A bimanual pelvic examination may provide useful information about uterine or adnexal masses or tenderness. Purulent cervical discharge, cervical motion tenderness, and adnexal mass are signs of PID.

Associated Signs: Jaundice suggests hemolysis or liver disease. Pallor and jaundice point to sickle cell crisis. A positive iliopsoas test or obturator test suggests an inflamed retrocecal appendix, a ruptured appendix, or an iliopsoas abscess. A positive Murphy's sign suggests acute cholecystitis. Cullen's sign and Grey Turner's sign are unusual signs of internal hemorrhage. Purpura and arthritis suggest Henoch-Schönlein purpura. There are certain serious causes of abdominal pain that occur with a rash.

Investigations

Laboratory studies should be tailored to the patient's symptoms and clinical findings. Initial laboratory studies may include a complete blood cell count and urinalysis. A low hemoglobin level suggests blood loss or underlying hematologic abnormalities, such as sickle cell disease. However, a normal hemoglobin level does not exclude an acute massive hemorrhage for which the body has not yet compensated. Leukocytosis, especially in the presence of a shift to the left and toxic granulations in the peripheral smear, indicates an infection. Platelet counts are frequently elevated in inflammatory diseases. Urinalysis can help identify urinary tract pathology, such as infection or stones. A pregnancy test should be considered in postmenarcheal girls. A sample to check the stool for blood is obtained during the rectal examination and the result is often confirmed with three additional outpatient sample cards used at home.

Imaging Investigations

Plain-film abdominal radiographs are most useful when intestinal obstruction or perforation of a viscus in the abdomen is a concern. Chest radiographs may help rule out pneumonia. The most contentious issue in emergency medicine may be the usefulness of ultrasonography and computed tomography (CT) in patients with abdominal pain. CT likely is more accurate than ultrasonography. However, the experience of the operator and interpreter significantly affect the accuracy of both modes. In the emergency department, ultrasonography probably is most useful in diagnosing gynecologic pathology such as ovarian cysts, ovarian torsion, or advanced periappendiceal inflammation. Pelvic sonography is indicated because of its sensitivity for free fluid, the frequency of retroperitoneal disease and the visualization of the ileum for Crohn's disease, adenopathy and chronic features of abscess from fistulas or Meckel's diverticulum. CT involves radiation exposure and may require the use of contrast agents. CT may be necessary if excessive bowel gas precludes ultrasonographic examination. If sonography reveals no abnormalities and either chronic peptic ulcer disease or irritable bowel disease is suspected, an upper GI series with small bowel testing is indicated. If the upper gastrointestinal tract is the only site ▶

Differential Diagnosis of Acute Abdominal Pain by Predominant Age

Birth to one year	Two to five years	Six to eleven years	Twelve to eighteen years
Infantile colic	Gastroenteritis	Gastroenteritis	Appendicitis
Gastroenteritis	Appendicitis	Appendicitis	Gastroenteritis
Constipation	Constipation	Constipation	Constipation
Urinary tract infection	Urinary tract infection	Functional pain	Dysmenorrhea
Intussusception	Intussusception	Urinary tract infection	Mittelschmerz
Volvulus	Volvulus	Trauma	Pelvic inflammatory disease
Incarcerated hernia	Trauma	Pharyngitis	Threatened abortion
Hirschsprungs disease	Pharyngitis	Pneumonia	Ectopic pregnancy
	Sickle cell crisis	Sickle cell crisis	Ovarian/testicular torsion
	Henoch-Schonlein purpura	Henoch-Schonlein purpura	
	Mesenteric lymphadenitis		

of investigation, far too much disease may be missed. Barium enema is indicated primarily in the context of obstruction or chronic intussusception. Abdominal computed tomographic (CT) scan with contrast allows evaluation for extra-intestinal mass lesions, abscess and retroperitoneal disease.

Upper endoscopy is rarely indicated as a first-line investigation. 3 Biopsies of the esophagus, gastric antrum and duodenum may be indicated even in the absence of macroscopic disease to identify microscopic diagnostic features of eosinophilic gastritis, reflux esophagitis, *H. pylori*, granuloma of Crohn's disease and villus injury with enteropathy. Colonoscopy has replaced barium enema in the evaluation of pain with chronic diarrhea or bleeding.

Indications for Surgical Consultations in Children with Acute Abdominal Pain

- Severe or increasing abdominal pain with progressive signs of deterioration
- Bile-stained or feculent vomitus
- Involuntary abdominal guarding/rigidity
- Rebound abdominal tenderness
- Marked abdominal distension with diffuse tympany
- Signs of acute fluid or blood loss into the abdomen
- Significant abdominal trauma
- Suspected surgical cause for the pain
- Abdominal pain without an obvious etiology

MANAGEMENT

Treatment should be directed at the underlying cause. In many patients, the key to diagnosis is repeated physical examination by the same physician over an extended time. Traditionally, the use of analgesics is discouraged in patients with abdominal pain for fear of interfering with accurate evaluation and diagnosis. However, several prospective, randomized studies have shown that judicious use of analgesics actually may enhance diagnostic accuracy by permitting detailed examination of a more cooperative patient.

Self-Care at Home

A parent or caregiver must be observant and should contact appropriate help at the appropriate time. Monitor a child especially closely during recovery until the child is better. A teenager may not want to be bothered but still should be checked on.

- *Rest:* A child with active abdominal pain often will benefit from resting. Lying face down may help relieve gas pain, but the best position to lie in is the one that feels best to the child.
- *Diet:* People can survive a long time without solid food but need to keep up on liquids. Dehydration takes time to develop, so forcing fluids is not always necessary. A child who is actively vomiting will not be able to hold down a large amount of liquid. Giving small amounts (1-2 ounces) is recomended at a time until the child can handle more.
- *Fluids to give:* Water or boiled milk should not be given to infants because it can cause serious problems with the salt content of their bodies. Juices or the various dehydration liquids is recommended. Infants should get back on their usual feedings as soon as possible. Good choices for older children include juices, electrolyte drinks such as soups, and broth. Drinks with caffeine should be avoided.
- *Solid foods:* Solid foods should start slowly, first with toast or crackers, and advance to regular foods if they tolerate the feedings.

PROGNOSIS

The prognosis for abdominal pain in children is as diverse as the causes themselves. Abdominal pain identified and treated early carries a good prognosis overall. Pain undiagnosed and untreated can be life threatening. Consequently, early in the child's illness, a parent or caregiver should work with the pediatrician and hospital to ensure the child receives appropriate care.

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the SQUARE

Correct answers of the 'Test Yourself - 19'

1. a & c 2. b & c 3. b 4. c 5. c 6. a & c

The following are the 10 winners of the "Test Yourself -19"; they have been selected through lottery.

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Soon our officials will be visiting you with a token of our appreciation

Test Yourself – 20

1. All the points mentioned below are correct except:
   a. Gastroenteritis is the most common cause of abdominal pain in children.
   b. Constipation is a common cause of abdominal pain in younger infants.
   c. Drugs like "Erythromycin", "Salicylates" do not cause abdominal pain in children.
   d. Hypoglycemia, Sickle cell anemia is also among the causes of acute abdominal pain in children.
2. The following points are true except:
   a. The first AIDS case was diagnosed in 1982.
   b. About 7.4 million people in Asia are living with HIV.
   c. Study shows that about 60% of young people of Bangladesh have even been heard of AIDS.
   d. Cambodia, Myanmar, Thailand are experiencing serious epidemics of AIDS.
3. The below mentioned points are true except:
   a. Functional pain, constipation, pharyngitis are the differential diagnosis of abdominal pain in children of 12-18 years of age.
   b. Laboratory studies should be tailored to the patient's symptoms and clinical findings in abdominal pain in children.
   c. Trials have shown that judicious use of analgesics may enhance diagnostic accuracy in case of abdominal pain in children.
   d. Pain usually does not precede vomiting in the acute surgical abdomen.
4. All the following points are true except:
   a. Montene® 5 is a film-coated tablet.
   b. Montene® is orally active compound.
   c. Montene® is more than 99% bound to plasma protein.
   d. The mean plasma half-life of Montene® ranged from 3-6 hours in healthy young adults.
5. All the following are correct except:
   a. Prevention is the mainstay of the response to AIDS.
   b. Random diagnostic HIV testing is indicated to all age groups for clinical diagnosis and management.
   c. Blood transfusions may account for 8-10 percent of all cumulative infections worldwide according to the WHO.
   d. Anti-retrovirals are not a permanent cure of HIV infection.
6. All the following points are true except:
   a. The pediatric dose of Montene® is 10mg daily without regards to meal.
   b. Montene® is not indicated for bronchodilatation in acute Asthma attack.
   c. Aspirin and NSAIDs can be given concomitantly with Montene®.
   d. Montene® is classified as pregnancy category B.

SEAR & WHO

Health secretaries from 11 SEAR (South East Asian Region) countries and WHO delegates visited *SQUARE*'s Dhaka Unit at the invitation of Ministry of Health & Family Welfare, Govt. of Bangladesh on 4th July, 2005. State-of-art technology in manufacturing and quality assurance of *SQUARE* Pharmaceuticals' impressed the visitors. Dhaka Unit of *SQUARE* Pharmaceuticals is one of the best among such facilities in South East Asia Region.

Japan

The honorable Ambassador of Japan H. E. Mr. Matsushiro Horiguchi showed his great satisfaction on the quality commitment demonstrated at *SQUARE* Pharmaceuticals during his visit to the *SQUARE* Pharmaceuticals' Dhaka Plant on July 26, 2005. During a discussion with Mr. Tapan Chowdhury, Managing Director of *SQUARE* Pharmaceuticals, he outlined the potential for investment and business between Japan and Bangladesh.

Libya

Four GMP Inspectors of Ministry of Health, Libya inspected and audited the manufacturing facility of *SQUARE* Pharmaceuticals Ltd. (Dhaka Unit) as a compulsory requirement for the export of pharmaceuticals to Libya. The factory was built as per the US FDA and UK MHRA guidelines. And, *SQUARE* is the first Bangladeshi company to take initiative to export pharmaceuticals to Libya.

Sudan

Sudan, the largest country of Africa, showed interest in importing medicines from *SQUARE* Pharmaceuticals Ltd. of Bangladesh. The Govt. of Sudan imports a huge quantity of medicines on a regular basis. With a view to that a high level Inspection Team of Ministry of Health, Govt. of Sudan audited *SQUARE* Pharmaceuticals' facility at Pabna and Gazipur during 13 to 16 July, 2005 as a regulatory requirement in Sudan.

Yemen

A three-member inspector's team from the Drug Regulatory Authority of Yemen visited *SQUARE*'s Pabna Unit & Dhaka Unit from 27th – 28th June, 2005. State-of-art technology in manufacturing and quality assurance of *SQUARE* Pharmaceuticals' impressed the visitors. *SQUARE* has been exporting its finished pharmaceuticals to Yemen since 1996 and expects to get further momentum based on the inspection report.

Product Profile- Montene®

Montene® 5 (Montelukast 5 mg chewable tablets)
Montene® 10 (Montelukast 10 mg film-coated tablets)

Composition

Montene® 5 tablet : Each chewable tablet contains Montelukast Sodium INN equivalent to Montelukast 5 mg.

Montene® 10 tablet : Each film-coated tablet contains Montelukast Sodium INN equivalent to Montelukast 10 mg.

Pharmacology

The cysteinyl leukotrienes (LTC_4, LTD_4, LTE_4) are products of arachidonic acid metabolism. Cysteinyl leukotrienes and leukotriene receptor (CysLT) occupation have been correlated with the pathophysiology of asthma.

Montelukast is an orally active compound that binds with high affinity and selectivity to the $CysLT_1$ receptor. Montelukast inhibits physiologic actions of LTD_4 at the $CysLT_1$ receptor without any agonist activity.

Montelukast is rapidly absorbed following oral administration. After administration of 10 mg film-coated tablet to fasted adults, the mean peak plasma concentration (C_{max}) is achieved in 3 to 4 hours (T_{max}). The mean oral bioavailability is 64%. For the 5 mg chewable tablet, the mean C_{max} is achieved in 2 to 2.5 hours after administration to adults in fasted state. The mean oral bioavailability is 73% in the fasted state vs 63% with a standard meal in the morning. Montelukast is 99% bound to plasma proteins. Montelukast and its metabolites are excreted almost exclusively via bile. The mean plasma half-life of Montelukast ranged from 2.7 to 5.5 hours in healthy young adults.

Indication

Montene® is indicated for prophylaxis and treatment of asthma in adults and children 2 years of age and older.

Dosage and Administration

Adolescents and Adults: The dosage for patients 15 years of age and older is one 10 mg tablet daily to be taken in the evening without regard to meal.

Pediatric Patients: The dosage for children 6 to 14 years of age is one 5 mg chewable tablet daily to be taken in the evening without regard to meal. No dosage adjustment within this age group is necessary.

Contraindication

Hypersensitivity to any component of this product.

Adverse Effects

Montelukast appears to be well tolerated. In clinical trials, the most common adverse effect reported was headache. Rash, dyspepsia, dizziness, and abdominal pain were all reported in less than 2% of patients.

Precaution and Warning

Montelukast is not indicated for bronchodilatation in acute asthma attacks, including status asthmaticus. Patients should be advised to have appropriate rescue medication available. While the dose of inhaled corticosteroid may be reduced gradually under medical supervision, Montelukast should not be abruptly substituted for inhaled or oral corticosteroids.

Montelukast should not be used as monotherapy for the treatment and management of exercise-induced bronchospasm. In this condition patients should continue to use their usual regimen of inhaled β-agonists as prophylaxis and have available for rescue a short-acting inhaled β-agonist.

Drug Interactions

Patients with known aspirin sensitivity should continue avoidance of aspirin or non-steroidal anti-inflammatory drugs (NSAIDs) while taking Montelukast.

Montelukast has been administered with other therapies routinely used in the prophylaxis and treatment of chronic asthma. Montelukast does not alter the pharmacokinetics of theophylline, prednisolone, oral contraceptives, terfinadine, digoxin, and warfarin. Montelukast was used concomitantly with a wide range of commonly prescribed drugs in clinical studies without evidence of clinical adverse interactions.

Use in Pregnancy and Lactation

Montelukast is classified as pregnancy category B. There have been no reports of its use in pregnant women. Montelukast is also known to be excreted into breast-milk, but only limited information is available. Caution should be used prior to initiating Montelukast therapy in nursing mothers.

Storage

Montelukast should be stored at a cool and dry place, protected from light and moisture.

How Supplied

Montene® 5 tablet : Box containing 1x10 tablets in Alu-Alu blister pack.

Montene® 10 tablet : Box containing 1x10 tablets in Alu-Alu blister pack.

For relief of inflammation & pain

Miclofenac® 50 & 75

Diclofenac Sodium 50 mg & Misoprostol 200 mcg tablet
Diclofenac Sodium 75 mg & Misoprostol 200 mcg tablet

US FDA approved

Combines proven efficacy with safety within

First time in Bangladesh

Orogel® Dental Gel

Benzocaine USP 20% w/w

Relieves *Acute Dental Pain* Instantly

- Easy to apply to the oral cavity
- Relieves dental pain faster than NSAIDs
- Safe for asthma & peptic ulcer patients
- Safe for pregnant & lactating mothers

Sulprex® MDI

Salbutamol 100 μg & Ipratropium Bromide 20 μg/puff; 200 puffs

More than a bronchodilator for COPD patients

First Time Launched in Bangladesh

Benefits of Sulprex® MDI

- Leads to greater bronchodilation than Salbutamol & Ipratropium alone.
- Ensures patients compliance as it eliminates the hazard of taking two MDIs separately.
- Is cost effective compared to individual preparation.

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