AIDS/HIV

AIDS in India

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Contributing factors to the epidemic are discussed and suggestions made for its management.

HIV infection in India was first detected in 1986 among female sex workers in Chennai.[1] Today, with an estimated 5.134 million infections,[2] India is home to the second largest population of people living with HIV and AIDS (PLHA). This article describes the state of the epidemic in India, the main contributing factors, and suggestions for changes that should be made in the management of the epidemic.

NUMBERS

The executive director of the Global Fund for AIDS, TB and Malaria, suggested that in 2004, India overtook South Africa in having the largest number of people living with HIV/AIDS in the world.[3] The true prevalence of HIV in India is still debatable. Some of the available estimates of incidence have been carried out among sex workers in Maharashtra (22.1 per 100 person years) and drug users in Chennai (4.53%).[4 5] There is an urgent need for more studies estimating incidence of HIV in India. The case reporting system for HIV in the country requires improvement as sentinel surveillance has detected HIV in states that had not reported any infections.

AT RISK POPULATIONS

Although the epidemic was initially described among sex workers, the prevalence of HIV among sex workers has more or less stabilised[6] because of targeted interventions, increased condom use, and empowerment strategies that encourage sex workers to demand safe sex from clients. Meanwhile, housewives with single partners are gradually accounting for a larger proportion of infections.[7 8] These monogamous women are primarily put at risk by the extramarital sexual behaviour of their husband, from whom their infection is most probably acquired. The housewife is becoming the new face of the epidemic in India; a trend that necessitates research on microbicides and other female controlled HIV/STD prevention technologies.

VOLUNTARY COUNSELLING AND TESTING

Data clearly show that HIV has spread to all groups of Indian society.[9] Over 90% of those infected with the virus are not aware of their status.[10] Most diagnoses occur at late stages of the disease.[11] While the number of voluntary counselling and testing centres is on the rise in both government and non-governmental settings in India, facilities have been underused because of (a) inaccurate perceptions of personal risk (b) a widespread belief that HIV is restricted to high risk populations such as sex workers, drug users, and truck drivers and (c) the persistence of stigma surrounding HIV.

Antenatal women and surgical patients routinely undergo a HIV antibody test in most medical institutions. On the basis of a positive result, health care is often denied to patients. In such situations, the test is often not adequately discussed with patients and a risk assessment not carried out. The possibility of a patient having a false negative test result is thus overlooked; consequently, necessary post-exposure prophylaxis for an occupational risk may be withheld.[12]

TREATMENT, CARE, AND SUPPORT

Treatment guidelines

HAART is started in India based on the WHO criteria: absolute CD4 count <200 cell/μl, patient has an AIDS defining illness or CD4 200–350 with opportunistic infections. Before the introduction of CD4 counts, WHO staging of disease was used to start HAART. However, today, WHO staging for initiation of HAART is restricted to rural areas where CD4 estimation is not available. The most common first line regimen is a fixed dose generic combination of stavudine (d4T) + lamivudine (3TC) + nevirapine (NVP). All NNNRTIs and NRTIs that are currently used in developed settings are being manufactured on a large scale by generic producers in India. Most of the PIs are also manufactured by Indian pharmaceutical companies. The commonly used agents have been evaluated for their safety, efficacy, and tolerability among Indian patients with encouraging results.[13 14]

Accessibility

It is essential to strengthen all testing protocols to include referral of HIV positive clients to well established treatment, care, and support facilities. Anecdotal evidence suggests that the disclosure of a positive test result in the absence of proper guidance and counselling may lead some patients to access inappropriate medical treatment, suffer depression, contemplate or commit suicide, and even engage in high risk activities with intent to further transmit their infection.

The 3×5 initiative marked a shift in thinking in the response[15] to the HIV/AIDS epidemic: it brought urgency to treatment and a commitment of public resources that were until that point only spent on prevention of HIV. Under this initiative, globally, WHO/UNAIDS aimed to rapidly scale up HIV/AIDS treatment and care to three million people in developing countries by the year 2005. In India, NACO has committed to providing free antiretrovirals to 100 000 persons under this initiative by the year 2007. As of 2005, about 35 000 patients in public and private sectors were receiving HAART.

There is a lack of trained HIV physicians in India. Few hospitals and physicians provide health care for people living with HIV/AIDS, partly because of reluctance among healthcare personnel to deliver treatment to this population. Reasons for this reluctance include personal values and prejudices, an inaccurate perception of occupational risks entailed in health care, and the belief that HIV negative patients will refuse to share health care facilities with people living with HIV.

Antiretroviral agents

Antiretroviral (ARV) agents are widely available in India. ARV drugs may be prescribed by any physician and many pharmacists dispense such drugs without prescription; some patients have been prescribed suboptimal doses of drugs. Given that medical insurance does not cover AIDS treatment and there are comparatively few, and geographically widespread, free government ARV supplying centres, most patients fund their own treatment. Faced with financial constraints and being unaware of the implications of suboptimal doses, patients often buy one or two of the three drugs prescribed. Many persons taking ARV treatment are transient users and poorly adherent.

Such mono/dual therapy or suboptimal adherence has been linked with an increased risk of development of drug resistance thereby limiting future options for care. The emergence of drug resistant viral strains[16] could severely affect and even wipe out the competitive advantage provided by the generic drugs offered by Indian pharmaceutical companies.

To prevent the realisation of this situation, the number of free ARV supplying centres needs to be increased and access improved. The distribution of ARV agents must also be better regulated; physicians should be accredited to prescribe HAART and pharmacists made to comply with the Indian Drug Act (1940) that prohibits the sale of specified drugs without prescriptions.

Patients are often maintained with HAART without adequate CD4 monitoring arising from a lack of affordability, poor laboratory infrastructure in the public sector, and disregard of treatment guidelines. This can be life threatening in certain instances such as the use of NVP in men with CD4 over 400 or women with CD4 higher than 250.

Affordability

Highly active ARV therapy has improved the survival of persons living with HIV and AIDS the world over.[17] A precipitous decrease in the cost of HAART was made possible by the successive introduction of generic versions. Of note is the impact on first line drugs. For example, stavudine + lamivudine + NVP that cost about US$740 per month in 1998 became available for less than US$20 in 2005. However, given that the per capita income of India is US$620 per year,[18] even this regimen is unaffordable for most patients infected with HIV. While the reduced cost of such generic drugs permitted the initiation of HAART in the country,[19] this regimen is now almost never used in more economically developed countries because of the availability of newer and less toxic agents.

Coinfections

High rates of coinfections among people living with HIV/AIDS complicate the management of HIV. HBV/HCV coinfection is widely prevalent among HIV infected injecting drug users.[5] Tuberculosis (TB) is also highly prevalent among HIV infected persons in India, especially those with lower CD4 counts.[11] There have also been reports of high rates of coinfection with Kala-Azar in India.[20] The most commonly used regimens for HIV and TB include the drugs NVP and rifampin respectively, both of which are hepatotoxic and interact with each other resulting in suboptimal dosing.

Continuing medical education (CME) for physicians

CME for medical professionals is not mandatory in India. HIV disease management is dynamic and knowledge among physicians treating HIV is often dated or limited to the product promotion education that pharmaceutical representatives engage in. Rash and Steven-Johnsons syndrome are still common in India as most physicians are unaware of how to dose escalate when starting a patient with a NVP containing regimen. Physicians are still unfamiliar with the principles of switching ARV agents in patients failing therapy. Physicians prescribing ARV agents should have a thorough understanding of the principles of HAART and should become familiar with laboratory tests that are relevant to HIV disease monitoring.

Adherence issues

The availability of fixed dose ARV combinations reduces pill burden and thus facilitates improved adherence. However, most people infected with HIV in India are poorly educated and do not understand the need to continue HAART when they feel better or when their CD4 counts have risen significantly. Interruption of therapy places them at a high risk for developing drug resistance; this occurs even more easily with NNRTIs, which have long serum half lives. Some temporarily stop treatment, restarting when adequate funding becomes available.[21] In sero-concordant couples, where only one partner may clinically require HAART, they often share their drugs with their HIV negative partner or spouse. To achieve optimal adherence, clinics should evaluate and use a number of measures such as directly observed treatment, family counselling, and intensive patient education.

Second line ARV regimens

Less than 10% of the patients can afford a PI based regimen. Plasma viral load (PVL) measurement is almost never carried out because of financial constraints. A clinician usually identifies that a patient is failing therapy when successive CD4 counts show declines or when the patient starts developing new opportunistic infections. This can be a few months to years after virological failure and by this stage the patients could have accumulated enough mutations to render the remaining NRTIs, namely didanosine, abacavir, and tenofovir, useless.[22 23] If second line agents are to be more effectively and appropriately used in India, then PVL quantification must become a routine part of HIV monitoring. Low cost techniques to estimate PVL are an urgent requirement in resource constrained settings such as India. There are few studies in India evaluating the rates of treatment failure and drug resistance among patients. Drug resistance to 3TC among treatment naive patients has recently been reported by Sachdeva and colleagues.[24]

PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV

There are about 27 million live births per year in India. The government of India has introduced VCT for all ANC attendees in the public sector. In the private sector, HIV testing is carried out routinely for all pregnant women. The prevalence of HIV among antenatal women is 0.1 to 2.25% across the country.[25] Women found HIV positive in government centres are treated with a single dose of NVP at the onset of labour with one dose given to the child 72 hours after birth. Mothers are counselled about the risk of HIV transmission through breast feeding but the decision to use formula milk is left to the mother.[26]

SUCCESS STORIES

Management of sexually transmitted infections (STIs)

India has a high rate of STIs, an estimated 6% to 9% among the general population, roughly 40 million new infections a year.[27] STI, especially ulcerative STIs, increase the risk of HIV transmission. Appropriate management of STIs can reduce a person's susceptibility to HIV; STI treatment has been prioritised and has improved considerably in India. In rural areas where laboratory facilities are unavailable, syndromic management of STIs is being advocated. To strengthen this effort, diagnostic tests should be made more widely available.

HUMAN RIGHTS ISSUES

Physicians in India have always held a disproportionate power over their patients. Demands from activist networks of people living with AIDS to be treated with dignity, protected from discrimination by employers, and given access to education, care, and ARV drugs has led to an increase in general awareness about patients' rights.

QUACKS AND MAGIC CURES

Ineffective regulation of medical practitioners, patient ignorance, and an unwelcoming modern health sector, lure people living with HIV/AIDS

towards quack doctors and magic cures. In 1997 the Delhi State government introduced the Delhi Quackery Prohibition Bill in the Assembly after reports that nearly 30 000 quacks were operating in the capital alone.[28] Little is known on the interactions between ARV drugs and the drugs dispensed by quacks. Patients often interrupt HAART to use such alternative medication or even engage in their concomitant use.

CONCLUSION

In the past 20 years, the country has made substantial investment in HIV prevention. In the past five years there has been significant scale up of VCT services and capacity building for care and support. While retaining this focus to prevent backsliding of prevention, the next decade should be devoted to developing excellence in HIV care, reducing stigma thereby permitting increased uptake of services and making additional efforts to tackle the disparity in distribution and affordability of ARV agents.

ACKNOWLEDGEMENTS

The authors thank Ms Claire S Hawcroft for reviewing the manuscript.

Postgrad Med J 2006;**82**:545–547.
doi: 10.1136/pgmj.2006.044966

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