SPECIAL ARTICLE

AIDS in Indonesia: Current Problems, Future Impacts and Challenges

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ABSTRACT Since the first cases of AIDS were reported in the USA in 1981 and in Indonesia in 1987, millions of people throughout the world have been contracting this threateningly fatal disease. This report discusses and highlights the current problems and the future impacts of the disease in Indonesia. Data were collected from the Sub-Directorate STDs Control of the Directorate of Communicable Disease Control, Department of Health. The majority of cases were sexually active men and women between the ages of 15-49 years with the peak between 30-39 years in AIDS, and between 20-29 years in HIV(+). The mean age of HIV(+) males and females was statistically different ($p<0.0002$), where the mean age of HIV(+) males was 29.5 years, while in females it was 24.7 years. This new fatal disease has been reported from 15 out of 27 provinces in Indonesia, mainly from Jakarta, Bali, Riau, East Java and West Irian. Due to inadequate knowledge, and a limited surveillance of AIDS in Indonesia, no child was reported as having HIV(+) / AIDS. **[Paediatr Indones 1997;37:177-188]**

Introduction

From the first reported cases of AIDS recognized among homosexual men in the USA in 1981, it has become a very world-threatening fatal disease for this century, both in developed and developing countries. The transmission of HIV infection occurs through very unusual ways: either by homosexual or heterosexual contacts with infected partners, injections and intravenous inoculation with contaminated needles, blades or syringes, administration of infected blood products by transfusions, and by perinatal routes. Regardless of the normal precautions taken, within less than two decades, the transmission has been rampant and widespread throughout the world. Increase of

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sexual behavioral deviation in communities with no available vaccines, coupled with the lack of any satisfactory curative treatment, account for the widespread and the geometric growth of this fatal disease. Today, millions of people are infected with HIV throughout the world, and around half of them will suffer from AIDS within 5-10 years after infection.

The first case of AIDS in Indonesia was reported on a western tourist in Bali in 1987, and since then the number has grown year by year among in-country foreigners, and Indonesians as well. As one of the developing countries, Indonesia is in a potentially high risk situation for the spread of this horrible disease. This report shows the current situation of AIDS in Indonesia, highlights some of the dominant risk factors, and discusses suggested prevention.

Methods

The health infrastructure of Indonesia, which consists of 27 provinces, follows the administrative system set up for the country. Centrally, the Department of Health consists of 4 directorate generals. One of them is the Directorate General of Communicable Disease Control and Biological Environtment, to whom all communicable diseases, including HIV/AIDS, must be reported. Thus, in attempting to portray a complete picture of HIV/AIDS in Indonesia, data were collected from the Subdirectorate of Veneral Disease and other STDs of this directorate general. The reported cases were grouped based on age, sex, AIDS and HIV positive cases, and the provinces where the reports came from.

Results

A total of 364 HIV/AIDS cases in Indonesia were reported within 9 years, from 1987 to 1996. Until December 1995, 15 out of 27 provinces reported AIDS/HIV positive cases as seen in Table 1. Ten out of 15 HIV (+) cases in South Sumatera and 65 out of 96 HIV (+) cases in West Irian were Thailand fishermen who have returned back to their homes in Thailand.

Since the first cases of AIDS was reported in 1987 in Bali, during that year the total cumulative AIDS/HIV (+) in Indonesia was 6 cases. This consisted of 2 AIDS, and four cases with HIV (+). Since then it has increased year by year particularly during the last five-year period, from 1991 through 1995. Table 3 shows the sex distribution of HIV (+) / AIDS cases during an eight-year period, from 1987 through 1995. The male and female ratio of AIDS cases and HIV (+) was 2:1 and 13:1 respectively. Sixteen HIV (+) data were not complete as they did not include the sex of the individuals.

Table 1. Cumulative AIDS/HIV positive cases by provinces

PROVINCE	AIDS			HIV (+)				Total
	M	F	U	M	F	U	Subtotal	
1. North Sumatera	1	-	1		2	-	2	3
2. West Sumatera	-	-	-	-	1	-	1	1
3. Riau	-	-	-	2	27	-	29	29
4. South Sumatera	1	-	1	10*	2	2	14	15
5. Jakarta	49	1	50	60	10	5**	75	125
6. West Java	5	3	8	1	4	1**	6	14
7. Central Java	-	-	-	3	1	1	5	5
8. Yogyakarta	2	-	2	2	-	-	2	4
9. East Java	5	-	5	5	15	6**	26	31
10. West Kalimantan	-	-	-	2	1	-	3	3
11. East Kalimantan	-	-	-	-	1	-	1	1
12. Bali	10	1	11	18	3	1	22	33
13. West Nusa Tenggara	1	-	1	-	-	-	-	1
14. Maluku	-	-	-	3	-	-	3	3
15. West Irian	6	2	8	78*	10	-	88	96
Total	80	7	87	184	77	16**	277	364

* Including Thai Fishermen; ** Including 7 blood donors

Table 2. AIDS/HIV positive cases in Indonesia by year

YEAR	AIDS			HIV (+)				Total
	M	F	U	M	F	U	Subtotal	
1987	2	-	2	4	-	-	4	6
1988	2	-	2	5	-	-	5	7
1989	3	-	3	3	1	-	4	7
1990	5	-	5	3	1	-	4	9
1991	12	-	12	3	3	-	6	18
1992	10	-	10	14	4	-	18	28
1993	15	2	17	69	27	-	96	113
1994	13	3	16	40	27	3	70	86
1995	19	1	20	43	14	13	70	90
Total	81	6	87	184	77	16	277	364

M = male; F = female; U = unknown

Table 3. Cumulative AIDS/HIV (+) in Indonesia by sex for 9 year from 1987 through 1995

SEX	AIDS	HIV (+)	Total
Male	81	184	265
Female	6	77	83
Unknown*	0	16	16
Total	87	277	364

* Including blood donors and incomplete reports; $X^2 = 64.5991$, DF = 2 $p < 0.0005$

Table 4 shows that from the total of 364 cumulative AIDS/HIV (+) cases, 46 cases were resident foreigners and tourists, 75 cases were Thai fishermen, 230 cases were Indonesian, and in 13 cases the data were incomplete.

Table 4. Cumulative AIDS/HIV (+) cases by nationality*

NATIONALLY	AIDS	HIV (+)	Total
Indonesian	65	165	230
Foreigners	22	99	121
Unknown	-	13	13
Total	87	277	364

$X^2 = 8.5119$ DF = 2 $p < 0.02$

*Nationality means those from other countries (foreigners)

The main route of transmission of HIV/AIDS in our cases seems through sexual intercourse where 59.1% were heterosexual and 22% were homosexual/bisexual; while through injection by drug users, there were 4 cases, and through blood transfusion, 2 cases. Among the total 87 AIDS cases in Indonesia, 65 cases (75.7%) were Indonesians and 22 cases (25.3%) were foreigners. Most of them, 50 out of 87 AIDS cases (57.7%) were reported from Jakarta.

The vast majority of AIDS cases, more than 90%, were below 50 years of age. The peak was at the age between 30 years and 39 years which represented 54% of AIDS. The youngest male and females AIDS cases were 19 years and the oldest male was 62 years, the oldest female being 55 years of age. While in HIV (+) males cases, the peak was between 25-29 years representing 46.7% with a mean age of 29.5 years; in females, the peak was a younger age: between 20-24 years representing 39% with a

mean age of 24.7 years. The difference of these mean ages between males and females is statistically significant ($p<0.005$). No pediatric case of AIDS or HIV (+) was reported.

Table 5. Cumulative AIDS by province and nationality

PROVINCE	INDONESIAN	FOREIGNER	TOTAL	DEATH
1. North Sumatera	1	-	1	1
2. West Sumatera	-	-	-	-
3. Riau	-	-	-	-
4. South Sumatera	1	-	1	1
5. Jakarta	39	11	50	32
6. West Java	8	-	8	8
7. Central Java	-	-	-	-
8. Yogyakarta	1	1	2	-
9. East Java	3	2	5	5
10. West Kalimantan	-	-	-	-
11. East Kalimantan	-	-	-	-
12. Bali	4	7	11	6
13. West Nusa Tenggara	-	1	1	-
14. Maluku	-	-	-	-
15. West Irian	8	-	8	5
Total	65	22	87	55

Table 6. Cumulative AIDS / HIV (+) cases by risk factors

RISK FACTOR	AIDS	HIV (+)	TOTAL
Homo / bisexual	46	34	80
Heterosexual	22	193	215
IDU	2	2	4
Contaminated Blood	2	-	2
Haemophilia	1	1	2
Unknown	14	47	61
Total	87	277	364

$X^2 = 80.0259$; DF = 5; $p < 0.0005$

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4. South Sumatera	1	-	1	1
5. Jakarta	39	11	50	32
6. West Java	8	-	8	8
7. Central Java	-	-	-	-
8. Yogyakarta	1	1	2	-
9. East Java	3	2	5	5
10. West Kalimantan	-	-	-	-
11. East Kalimantan	-	-	-	-
12. Bali	4	7	11	6
13. West Nusa Tenggara	-	1	1	-
14. Maluku	-	-	-	-
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IDU	2	2	4
Contaminated Blood	2	-	2
Haemophilia	1	1	2
Unknown	14	47	61
Total	87	277	364

$X^2 = 80.0259$; DF = 5; $p < 0.0005$

Table 7. Cumulative AIDS/HIV (+) cases in Indonesia by age group

AGE GROUP (yr)	AIDS				HIV (+)			Subtotal	Total
	M	F	U	S	M	F	U		
0 - 14	-	-	-	-	-	-	-	-	-
15 - 19	1	1	-	2	3	13	-	16	18
20 - 24	4	1	-	5	27	30	1	58	63
25 - 29	9	-	-	9	86	18	2	106	115
30 - 34	22	1	-	23	24	9	-	33	56
35 - 39	21	3	-	24	24	3	-	27	51
40 - 44	11	-	-	11	4	1	-	5	16
45 - 49	8	-	-	8	3	1	1	5	13
50 - 54	1	-	-	1	1	-	-	1	2
55 - 59	1	1	-	2	2	-	-	2	4
60 - 64	2	-	-	2	1	-	-	1	3
Unknown	-	-	-	-	9	2	12	23	23
Total		7	-	87	184	77	16	277	364

X_m = 36.25 X_f = 34.14 X_m = 29.5 years X_f = 24.7 years
SD_m = 5.2 SD_f = 11.8 SD_m = 3.86 SD_f = 3.75
t = 0.1689 p > 0.1 t = 9.2307 p < 0.005

Discussion

Indonesia's efforts, like other developing countries, have been concentrating on eradicating poverty and backwardness. However, these efforts are now greatly hindered by the overburdening worldwide health problems of HIV/AIDS seeping into our national communities. Although sentinel surveillance of HIV/AIDS in Indonesia is still limited and inadequate, based on our existing data, HIV/AIDS is indeed a growing problem which will cause deteriorating impacts not only on the health of the community, but also on the demographic, socioeconomic, even on the political stability of the country.

Viewing that, more than 90% of HIV (+) and AIDS cases in Indonesia were sexually active males and females between the ages of 15 and 49, with males and females in a ratio of 3:1. In general, the male was more susceptible to HIV infection, since male to female ration in AIDS and in HIV (+) cases was 13.5:1 and was 2.4:1 respectively. However, in younger ages, young girls between 15 years and 19 years were more susceptible than those young men in the same age category, with a male to female ratio of 1:4.

As HIV (+) will progress into AIDS, the length of time needed from initial exposure to HIV to the onset of clinical symptoms of AIDS is variable, depending on many factors considered solely or simultaneously. Those factors are genetic susceptibility, sex, pregnancy, risk activity, co-infection with other infectious diseases, particularly virus infection, age of the patients, and route of infection. Of interest but still unknown are factors influencing a great number of males in AIDS cases which are still unknown.

No children in Indonesia were reported as having HIV (+) and AIDS, since the community and health personnel's awareness of this disease among children is still inadequate. A child could contract HIV infection through contaminated blood and blood product transfusion, the use of inadequately sterilized equipment, child sex abuse, and perinatal transmission. Perinatal transmission is the only significant source of HIV infection in infants. The route of perinatal transmission could be transplacental during intrauterine life, at the time of delivery, or through breast milk.

Many studies of perinatal transmission have been conducted in developed and developing countries with the results that the risk of transmission in developed countries was between 13% and 32%. While, in the developing world, it is higher: between 28% and 52%. This wide variation is due to differences in study design, definition of infection in the child, and methods of calculation of transmission. The risk of an HIV transmission from an HIV (+) mother to her child is determined by many factors such as the stage of disease, the virulence of the mutant virus, the preterm delivery, the invasive procedures during labor, and the use of breast milk of the infected mother.

As HIV can be detected in breast milk[1] and the existing microlaesi on the nipples of the breast and in the infant's mouth as well, the risk of HIV transmission from an HIV (+) mother to her infant increases; so that breastfeeding among HIV (+) mothers will enhance the spread of this fatal disease. Based on a Eurapean Collaborative Study[2] the odd ratio of transmission was two-fold higher than in those who has never breastfed children. This finding poses a difficult dilemma for Indonesia as one of the developing countries where breastfeeding is encouraged and widely practiced. Breastfeeding prevents malnutrition and infection in early life, and reduces infant mortality rates, as well. However, breastfeeding should be discouraged among HIV (+) mothers or among nursing sex-worker mothers. Ideally, HIV laboratory tests should be conducted on every mother prior to deciding whether to breastfeed or not to breastfeed her infant. But this is almost impossible and would be very expensive to conduct an HIV test on every pregnant woman and on every nursing mother. So that before a routine HIV test is conducted during antenatal care, surveillance should be limited to those high risk mothers with HIV infection, or having clinical symptoms of AIDS.

Urbanization and AIDS

Since 1968, when Indonesia started concentrating on modernizing, the development and improvement of transportation has been significant. Now all corners of the 13,000

island nation can be easily reached either by air, sea, or by land. However, this has also brought with it an unwarranted side effect related to our topic. Because with the fast and efficient movement of people, and the variety of transportation available, also comes the less easy to check spread of HIV and other STDs. So that in attempting to monitor HIV/AIDS problems in Indonesia, and particularly the growth of those problems in urban communities, regular compulsory HIV tests should be conducted among high risk group people, such as prostitutes, bar and massage girls, injected drug users, and those under treatment at STD clinics.

Although HIV/AIDS has been reported in 15 out of the total of 27 provinces of Indonesia, it does not mean those unreported provinces are free from HIV/AIDS, since national surveillance of HIV have not been widely conducted throughout the country. Note, that the vast majority of reported cases of HIV (+) / AIDS were from 5 provinces namely Jakarta (34.3%), West Irian (26.4%), Bali (9.07%), East Java (8.5%) and Riau (8.0%).

Urbanisation is a phenomenon which is almost impossible to check in the process of development in every developing country. The rate of urbanization is closely related to the imbalance of development between urban and rural communities. The urban areas which develop faster than those of the rural attract the young unskilled, and the less educated. They migrate to urban areas with a thousand dreams for a better life. However, those dreams remain as dreams, since those less educated and unskilled rural migrants find themselves unsuited socially and economically to urban life. Living in urban communities is not friendly and can even be cruel. Too many of these young men and women, many of whom leave wives or husbands back in rural habitats, are condemned to live lives of forced labor in the sex industry and other debilitating situations which sometimes offer a temporary financially rewarding livelihood, but which also offer a high risk of contracting and spreading HIV. All of the 29 HIV (+) at Batam, Riau province were young migrant girls.

Also to be considered is the fact that these young sexually active migrant men and women are far from their wives and husbands who have remained back in their rural homes. To complicate the matter, due to the social infrastructure of customs of Indonesia, annual visits to rural homes during major holidays such as "Idul Fitri", Christmas and New Year are a prerequisite. During these periods, the spread of HIV/AIDS to the rural areas becomes a disconcerting factor in the control of HIV.

Family Planning and AIDS

Indonesia is one of the leading success stories in achieving effective family planning programs through widely used oral contraceptives pills and IUD devices. However, women using oral contraceptive pills or IUDs are more susceptible to contract HIV infection.[2,3] So that Indonesia's success in family planning must be accompanied by

continuous cautious evaluation. And out of concern for maintaining vaginal hygiene, precautions against contracting Chlamydia infection should be taken into special consideration as the risk of HIV transmission is enhanced in women with chlamydia infection. Michael Linnan[4] reported that the prevalent rates are high among the sexually active ages of 15 to 50 years. This is likely to be between 2 and 5% for STD. Chlamydia infection was found in 8% of pregnant women who came for antenatal care in Surabaya, and higher among sex workers and women who used STD clinics. These conditions represent an enormous risk pool for HIV transmission to the general population.

HIV infection among child-bearing-age women will have a distinct effect on demographic patterns by increasing the perinatal mortality rates both of mothers and of infants, reducing fertility rates, and increasing HIV infection in infants. So that, all efforts which have been concentrated on to reduce perinatal mortality rates of mothers and on infants will be wasted, leaving the rate high or even increasing.

Fertility rates are significantly influenced by HIV infection. Ryder et al[5] reported that the fertility rates of seropositive women were lower than those among seronegative women; and it was the lowest among HIV positive women. The causes of these interesting phenomena have not been studied as to whether it is due to a lower rate of sexual activity of HIV women or is due to the primary effect of HIV infection.

Tuberculosis and AIDS/HIV

In countries where tuberculosis is widespread, there is a marked association between HIV and tuberculosis. Braun et al reported that HIV positive women in Zaire had a 26-fold increased risk of developing tuberculosis compared with seronegative women after both groups had a medium follow up of 32 months.[6]

As tuberculosis is still a health problem in Indonesia the cursed duet of tuberculosis and AIDS will have a disastrous impact not only on the economic growth, but also on the tuberculosis control program within the country. The health care costs of HIV infected patients with tuberculosis will be very expensive, causing a very great burden on an already limited national health budget.

Condoms and Prevention of AIDS

Although condoms are universally recommended to be used in family planning programs, and as a prophylactic measure against HIV and other STDs, the use of condoms either for family planning or for preventing disease is not popular in Indonesia. More than 90% of women never use condoms during sexual intercourse.[4] What is more, promoting the wide use of condoms against HIV infection in Indonesia is still controversial. Religious leaders oppose the wide use of condoms for preventing

HIV infection. They believe, with considerable concern and deep sincerity, that the wide use of condoms to prevent HIV, actually legitimizes prostitution and condones multiple sex partners which, in effect accelerates the spread of HIV/AIDS rather than prevents the spread of this fatal disease and other STDs. So that, due to the low acceptance of condom use, the risk of the widespread of HIV and other STDs will obviously increase.

Although the use of condoms is still controversial, the spread of HIV/AIDS in Indonesia is even more potentially explosive due to the growth of tourism, which, although it is one of the sources of foreign exchange, brings with it a growing sex industry. By looking at Thailand's experience reported in 1984 and up until 1988, this disease was not considered to be a Thai problem, because during that five-year period there were only 10 cases of AIDS, most of whom were gay. But in the next 2 years, the numbers of detected HIV (+) rocketed to 13,000 cases, and 5 years later by the end of 1994 there were one million cases. The increased speed of the spread HIV coincides with the tremendous development of tourism, where 5 million tourists visited Thailand in 1989, earning the country over US$ 500 million in foreign exchange.[7] In Indonesia during a similar five-year period starting with the report of the first case in 1987, there were 47 HIV (+), 24 (51.06%) of whom were AIDS. And within 9 years to the end of 1995 there were 364 detected HIV (+), 87 (23.9%) of whom were AIDS. Considering the iceberg phenomenon, it is believed that the unrecognized HIV (+) are much higher than those recorded in official data. Like Thailand, Indonesia has the potential for the wide-spread of HIV/AIDS since many risk factors exist which could be acting simultaneously on the spread of this disease. Those high risk factors are urbanization, behavioral, biological, socio-cultural, high prevalence of Tuberculosis, and even political and economic factors, such as the vast development of tourism. Therefore, it is wisely recommended to widely use condoms among high risk groups of people and at the same time health education about HIV/AIDS should be promoted extensively, particularly among the young generation. On the other hand a promotion of "healthy" tourism, i.e. without buying sex, should be encouraged.

The effectiveness of condoms in preventing HIV/AIDS is determined by their quality. They must not be easily torn during either sexual intercourse or when applying oil based lubricants which can severely weaken latex condoms within one minute of application. They must not be easily damaged during storage, transportation, or by improper techniques when putting them on. It is reported that due to poor storage and transportation of condoms, one fifth of the condoms in Bangladesh tore upon or during use.

In attempting to increase the effectiveness of condom in preventing HIV, a modern plastic condom with a better shelf life, a greater strength than latex materials, and otherwise defect-free has been recently produced and widely introduced, particularly during epidemics.

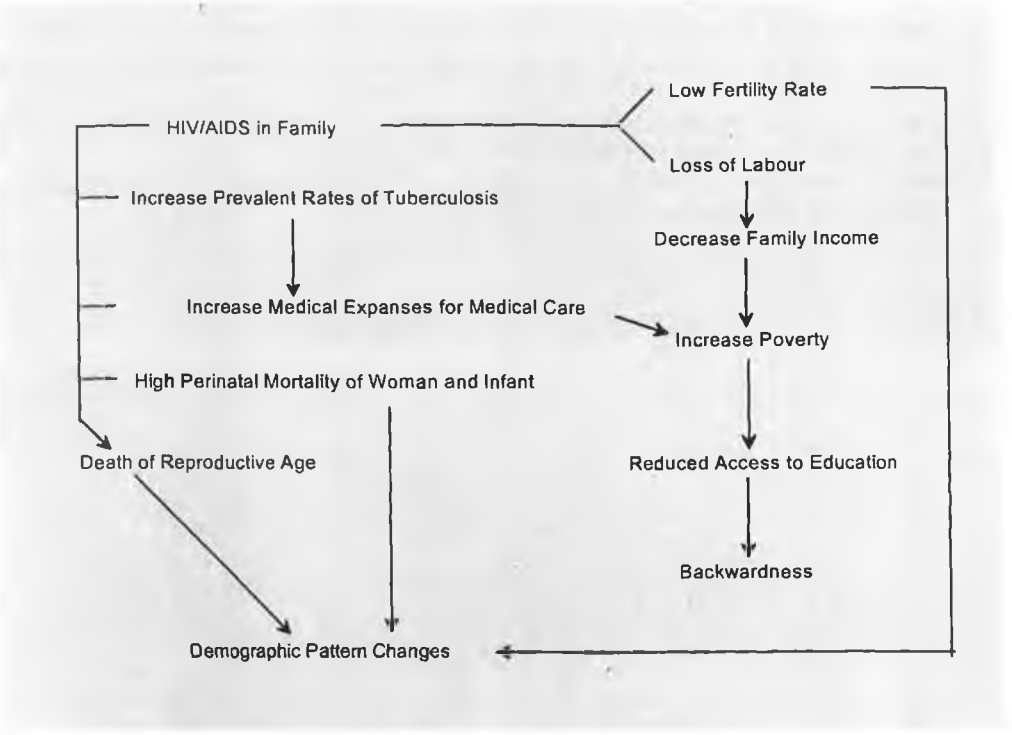

Figure. The possible impacts of AIDS/HIV

Due to ethical constraints, it is almost impossible to set up a research design about the role of condoms in preventing HIV infections. However, based on the retrospective data, the risk of contracting HIV infection is high among African countries where the use of condoms during sexual intercourse is very low. But in the United Kingdom and China where the use of condoms is high, the risk of infection is low.[8]

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