Breast feeding and HIV infection

Advice depends on the circumstances

Breast milk may transmit HIV, though the exact risk of transmission is unknown and varies with circumstances. The European collaborative study group has calculated the overall risk of transmission of virus from infected mother to child as 14% with breast feeding doubling this figure.1 When mothers acquire the infection postnatally the risk of transmission is 25%.2

Viruses containing cells may be transmitted in Colostrum and breast milk during lactation, although the exact mode of transmission remains unclear. Transmission varies with the stage of HIV infection in the mother and increases during the viraemia that occurs during primary HIV infection and later with progression to AIDS. Evidence for transmission at the time of a primary HIV infection during lactation comes from a Rwandan study of babies who seroconverted while being breast fed. The rate of postnatal transmission from mother to child was estimated at 60%.3

In the debates about the risks of transmitting HIV by breast feeding the risks of not breast feeding have received insufficient attention. In many poor communities breast feeding is not merely "baby friendly" but essential for survival. Even in developed countries breast feeding protects against diarrhoea and respiratory infection.4 Where there is poverty and poor hygiene these risks are much greater; the fate of newborn infants in many pre-industrial areas seems to depend largely on whether they are breast fed or not—either they are nursed or they die.5 In a Brazilian study Victoria et al found that the relative risk of infant death from common infections was much higher in those who had not been breast fed (14.2 times the risk of death from diarrhoea and 3.6 times the risk of death from respiratory infections than in those who were breast fed).6 The risk of death from all other causes was also 2.5 times greater in those receiving no breast milk.

The pernicious synergistic effect of not breast feeding and poor sanitation has been shown in Malaysia.7 In homes without piped water or a toilet, infants who were not breast fed were five times more likely to die after 1 week of age than those who were breast fed. In homes with these amenities infants who were not breast fed were still 2.5 times more likely to die than those who were. These studies are from South America and Asia; in many African countries affected by AIDS people are even more impoverished, women have less education, breast feeding is the cultural norm, and switching to artificial feeding would increase the toll of infant deaths even more than in Asia and South America.8

Artificially feeding infants of mothers with HIV infection should decrease the vertical transmission rate and therefore the morbidity, mortality, and costs of paediatric AIDS. In developed countries where milk powder is relatively cheap, clean water is almost universal, and facilities for cleaning and sterilising bottles are widely available, artificial feeding is relatively safe and the logical choice. In contrast, in Africa where HIV infection is common, artificial feeding is dangerous and costly. Relatively few homes have access to a safe water supply. Fuel for sterilising water and feeding bottles is expensive and scarce. Formula milk is prohibitively expensive for households and countries alike. In a recent survey of seven African countries, the cost of feeding a 3 month old baby 800 ml of commercial breast milk substitute a day varied between 27% (Zimbabwe) and 900% (Uganda) of the daily wage of a hospital cleaner (Hofvander et al, personal communication).

In relatively wealthy communities with sound health services the infants of HIV positive mothers should not be breast fed. Advising HIV positive mothers in poor communities on feeding is much more difficult. Mathematical modellers have been busy.910 They conclude that for Africa, even in the most pessimistic scenarios of a high maternal prevalence of HIV and a high rate of transmission by breast feeding, the risk of death in children is less from breast feeding than from not breast feeding. This supports the most recent WHO recommendation that "where the primary causes of infant deaths are infectious diseases and malnutrition breast feeding should remain the standard advice given to women, including those who are known to be HIV infected."

Most poor, HIV positive mothers will never hear the guidelines nor comprehend the mathematical models. They will continue to feed their babies in the most convenient, economic, and familiar way—at the breast. For their children breast is still best.

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Towards a separate adolescent medicine

Do one billion teenagers worldwide deserve their own specialty?

The first attempt to organise the clinical care of adolescents occurred in Britain with the establishment of the Medical Officers of Schools Association in 1884. While Britain took the initiative, others carried the idea further. How much further is evident from this year's presidential address to the Society for Adolescent Medicine in Washington. "The scope of adolescent issues has been sketched out," said Dr Karen Hein. "Our discipline is now defined and is board certifiable. Our training programmes and continuing education courses are replete with the fundamentals of our specialty. Now it's time to put more of our efforts into speaking out for the youth we serve."

Several arguments exist for a separate specialty for adolescents. Although paediatric mortality has fallen substantially and life expectancy increased among the geriatric population in North America, mortality among teenagers has remained virtually unchanged for 30 years. Motor vehicle accidents (usually alcohol related) are the main cause of death among adolescents, with more deaths per driver aged 18 than for any other age. Suicide causes the second highest number of deaths, and the rate among teenagers and young adults has increased fourfold since 1960. In England and Wales the rate of suicide among males aged 14 to 24 increased by 78% between 1980 and 1990.

The number of teenage pregnancies increases: among western industrialised nations Britain is second to the United States in teenage pregnancy rates. In all of these countries we are witnessing an epidemic of sexually transmitted disease, including AIDS. About one in five North American patients with AIDS is aged 20 to 30. If the latent period between infection and clinical disease averages seven to 10 years then many people must have been infected during their teens. In 1988 AIDS was the sixth leading cause of death among 15 to 24 year olds in the United States.

Experimentation with drugs such as marijuana, amphetamines, hallucinogens, and cocaine (chiefly as "crack") continues to be part of the rites of passage through adolescence for a substantial number of teenagers and a way of life for an appreciable minority. This use of drugs contributes substantially to fatal car accidents and suicide. The loss of inhibition and judgment that drugs induce increases sexual risk taking and furthers the spread of sexually transmitted diseases and AIDS.

When considering the scope of adolescent medicine it should not be forgotten that about three quarters of the world's billion teenagers live in developing countries. Because of poverty and the hopelessness that it engenders about 100 million teenagers are living on the streets in these countries, and they are at much greater risk of AIDS and violent death.

Chronic illnesses also affect increasing numbers of teenagers as medical science deals more effectively with illnesses that used to kill in utero, at birth, in infancy, and in childhood. Not only do conditions such as cystic fibrosis, haemophilia, or chronic renal disease present complex challenges to schooling and career development, but these teenagers must also deal with the burden chronic illness adds to the normal adolescent struggle for self esteem.

Work from North America has shown that the development of a specialty of adolescent medicine has augmented primary care efforts in this age group. Examples include the development of programmes to care for runaway youths, teenage prostitutes, and substance misusers. Although these patients demand more commitment than most devoted general practitioners can give, primary care doctors working alongside adolescent specialists have contributed substantially to their care. Adolescent clinics held in schools and settings where homeless teenagers congregate are evolving in many North American cities. These efforts are meeting many teenagers' preference for treatment away from their usual family or community clinic.

A paper recently published by the BMJ showed how effectively general practitioners can perform in adolescent health care. Two encouraging outcomes emerged from a study of adolescent smokers by Townsend and colleagues. These were that the participation rate among teenagers who were canvassed was 73%—higher than the group's experience with adults—and 60% of those who smoked regularly were willing to enter into a smoking cessation agreement with a doctor or nurse. Interestingly, many of the teenagers who had agreed to participate in the study had lost contact with the practice and both they and their doctors appreciated the reacquaintance.

Infants and children have their paediatric advocates, elderly patients have their geriatricians. Both of these groups of specialists have advanced primary care medicine with insights that have now become part of standard care. Similarly, adolescent specialists need continually to bring their clinical experience and research findings back to primary care doctors. Primary care doctors in Britain are clearly aware of adolescent health problems already. The North American experience strongly suggests that a specialty of adolescent medicine in Britain would help to further their efforts.

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