

mother-to-baby transmission

HIV can be transmitted from an HIV-positive woman to her child either during pregnancy, or during labour and delivery, or by breast-feeding. In Europe and the USA, about 15 to 20 per cent of babies born to HIV-positive women who are not taking anti-HIV drugs are infected. In most cases, HIV is thought to be transmitted during the last weeks of pregnancy or during delivery.

Factors that increase the risk

A child is more likely to contract HIV from its mother if she has advanced HIV infection or AIDS; she has high viral load or a low CD4 count; her waters break at least four hours before delivery; she has a vaginal delivery (as opposed to a planned caesarean section); the labour is difficult, requiring episiotomy or forceps; she has a genital infection (e.g. a sexually transmitted infection, such as chlamydia); she uses illicit drugs during pregnancy; or she breast-feeds. Becoming infected with HIV during pregnancy is also likely to increase the risk.

Breastfeeding

The risk of infection is roughly doubled to around 1 in 3 if the mother breastfeeds her child, and so women are advised not to if there is a safe alternative to breast milk. In the UK it is safe to bottle-feed your newborn baby.

Treatments to prevent mother to baby transmission: AZT and nevirapine

The anti-HIV drug AZT (zidovudine) has been shown to reduce the risk of transmission. In one study, pregnant women received AZT tablets during the last six months of pregnancy and intravenous AZT during labour and delivery, plus AZT syrup for their babies for the first six weeks after birth. They were also advised not to breastfeed. These women were much less likely to transmit HIV to their babies than women who did not take AZT. The use of AZT during pregnancy has reduced transmission rates to very low levels in the UK, parts of Europe and the US.

Studies in resource limited countries have shown that even when AZT is started later in pregnancy, or around the time of delivery, this can still reduce the risk of transmission by about half.

AZT alone is inadequate treatment for the woman herself, and could limit her future treatment options if she becomes resistant to the drug. Studies so far suggest this does not happen often when AZT is used in pregnancy only. AZT may not be quite as effective at reducing mother-to-baby transmission in a woman who has already taken AZT before pregnancy.

More recently trials conducted in Africa have found that a single dose of nevirapine given to a mother during labour and a single dose given to the baby after delivery can dramatically reduce the chances of a mother passing on HIV to her baby. There are however concerns about the possible emergence of nevirapine resistance, and

if a woman is receiving HAART she should not be given single-dose nevirapine.

Caesarean delivery

The risk of transmission is reduced if the baby is delivered by planned caesarean section, rather than by vaginal delivery. This is called an 'elective caesarean', and is scheduled for the 38th week of pregnancy, or performed sooner if labour begins early. Research suggests that anti-HIV therapy during pregnancy plus planned caesarean delivery may reduce the risk of transmission to as low as 2% (1 in 50). Caesarean delivery itself can carry some risk for the mother.

Treatment during pregnancy

Women who become pregnant when their CD4 count is high and viral load is low are less likely to pass on HIV to their child. These women may not require treatment themselves, and so they are advised to begin AZT some time after week 14 of their pregnancy.

Pregnant women are encouraged to take the treatment which they require regardless of their pregnancy. (An exception is the anti-HIV drug efavirenz, which is not recommended in pregnancy.) This means that antiretroviral therapy, considered standard treatment for adults with HIV, are now more widely used by women who become pregnant. There is no information about whether these are more effective than AZT alone in preventing HIV transmission, but it is assumed that they could be because they are much more able to reduce the mother's viral load.

Women who conceive whilst on treatment

During the first 14 weeks of pregnancy, the fetus is most vulnerable to any toxic effects of drugs. Taking anti-HIV drugs during this time may increase the risk of birth defects. However, stopping treatment may increase the risk of transmission, as viral load would be expected to rise, and so it is recommended that women continue their treatment throughout their pregnancy.

Side-effects in the baby

To date, children born to mothers exposed to AZT in pregnancy show no increased risk of birth defects or growth problems, though their continued monitoring remains important. Much less is known at the moment about the safety of other anti-HIV drugs. One small study of pregnant women taking AZT and 3TC, with or without protease inhibitors, found a high rate of premature births, and a small number of abnormalities at birth. However, other studies have reported no increase in premature delivery or congenital abnormalities and a large American study published in 2002 found that protease inhibitors did not increase the risk of having a premature or low birth-weight baby and that smoking, drinking or using drugs during pregnancy were the causes of premature delivery and other birth defects.

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