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Infants born to HIV-positive mothers more likely to require ICU admission, study finds

A new study from the University of Cape Town's (UCT) Centre for Infectious Disease Epidemiology and Research shows that HIV-negative infants born to HIV-positive mothers who are on antiretroviral treatment (ART) are more likely to require intensive care unit (ICU) admission.

Published in the *AIDS* journal, the researchers examined the effects of HIV and ART exposure on health outcomes of 929 infants during the newborn period (first four weeks of life). Approximately half (463) of the infants were born to mothers living with HIV and on ART. The other infants had not been exposed to HIV.

They found that birthweights were lower among HIV-exposed but uninfected (HEU) infants, and both preterm and very preterm deliveries were more common in them (15% versus 11% preterm and 4% versus 2% very preterm).

Lead researcher, Dr Kim Anderson, said the overall proportions of HEU versus HIV-unexposed uninfected (HUU) infants with hospital admission in general did not differ significantly during the newborn period (13% versus 16%), nor did the proportions with an infectious diagnosis, nor did deaths, although a larger proportion of HEU infants required ICU admission (7% versus 4%).

"Most hospitalisations occurred directly after birth (87%) and infection-related causes were identified in 34%. Among hospitalised infants who were HEU versus HUU, very preterm birth as well as very low birthweight occurred more than twice as frequently. Risk of ICU admission was higher in hospitalised HEU versus HUU infants," she said.

Anderson said the risk of ICU admission remained higher among hospitalised HEU infants after adjusting for very preterm birth.

"Among HEU infants, the odds of preterm birth were 5 times higher with maternal use of protease inhibitor versus non-nucleoside reverse transcriptase inhibitor-based regimens and 3 times higher with ART initiation/resumption in the first trimester versus being on ART at conception. Maternal viraemia near delivery was associated with 6 times higher odds of very preterm delivery," she added.

According to Anderson, these findings suggest that infants who are HEU do not have increased incidence of all-cause or infection-related hospitalisation during the newborn period. However, very preterm birth, very low birthweight and ICU admission were more likely in hospitalised HEU infants, indicating worse severity of infant morbidity.

Because antenatal HIV prevalence is high (30%) and early vertical transmission rates are low (3%) in South Africa, this means HEU children form a growing population. "An increasing number of very preterm HEU infants would demand improved infant ICU services. Optimising maternal health by initiating ART before pregnancy and maintaining viral suppression during pregnancy may help reduce preterm birth in HIV-exposed uninfected infants," said Anderson.

ENDS

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