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Newborn vitamin A reduces infant mortality

A single, oral dose of vitamin A, given to infants shortly after birth in the developing world can reduce their risk of death by 15 percent, according to a study conducted by researchers at the Johns Hopkins Bloomberg School of Public Health. The study is published in the July 2008 edition of the journal *Pediatrics*.

"It has long been known that vitamin A supplementation can reduce mortality in children over 6 months of age. Our study showed that vitamin A given at birth can also improve infant survival within the first 6 months of life," said Rolf D.W. Klemm, DrPH, MPH, the study's lead author and a researcher with the Bloomberg School's Center for Human Nutrition.

The study enrolled 15,937 newborns from rural communities in northwest Bangladesh, where over 90 percent of babies are born at home. Half were randomly selected to receive a 50,000 IU dose of vitamin A, while the other half received a placebo. A 200,000 IU dose of vitamin A is recommended semi-annually for older children. The vitamin A was given orally to the infants within a few days of birth, usually by 7 hours after delivery. The mortality rate for the vitamin A group was 38.5 deaths per 1,000 births compared to 45.1 deaths per 1,000 births for the non-vitamin A group.

Although vitamin A reduced infant deaths from all causes, lives were likely saved by reducing the severity of potentially fatal infections which are responsible for most deaths in early infancy in South Asia.

"This study supports the findings of previous vitamin A studies in Southern Asia where the evidence is now strong that vitamin A given to newborns can dramatically reduce mortality," said study co-author Keith West, DrPH, MPH, RD, the George G. Graham Professor in Infant and Child Nutrition at the Bloomberg School of Public Health. "More studies are urgently needed to determine if newborn vitamin A supplementation would reduce mortality among infants in other regions, especially Africa."

"We are excited by the results of this study, that build on two previous studies in South Asia, confirming this low cost intervention can significantly contribute to reducing mortality in the first 6 months of life," said Kent R. Hill, assistant administrator for Global Health at the U.S. Agency for International Development (USAID). He added, "A key next step is to consider the operational issues for using this intervention." In conjunction with other partners, USAID is conducting operations research in Nepal and Bangladesh to determine possible approaches for delivering vitamin A to newborn infants.

In the 1980s, Alfred Sommer, MD, MHS, demonstrated that vitamin A deficiency dramatically increased the risk of child mortality. Sommer, along with West and colleagues from Hopkins further demonstrated that a single dose of vitamin A could reduce child mortality by 34 percent. The control of vitamin A deficiency is a global goal of the World Health Organization and is considered one of the most cost-effective of all health interventions for saving young lives.

"Because childhood mortality is greatest during the first few months of life, a single dose of vitamin A administered by mouth to a newborn child can save the lives of an additional 300,000 children in Asia every year," said Alfred Sommer, MD, MHS, professor and dean emeritus of the Bloomberg School of Public Health. "That is on top of the one million lives a year that would be saved by dosing all vitamin A deficient children twice a year from six months through 5 years of age."

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"Newborn Vitamin A Supplementation Reduced Infant Mortality in Rural Bangladesh" was written by Rolf D.W. Klemm, DrPH, MPH; Alain B. Labrique, MSc, MHS, PhD; Parul Christian, MPH, DrPH; Mahbubur Rashid, MBBS, MHS; Abu Ahmed Shamin, MSc; Joanne Katz, MS, ScD; Alfred Sommer, MD, MHS; and Keith West, DrPH, MPH, RD.

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