

Chlorhexidine for Umbilical Cord Care

Health need

Omphalitis, an infection of the umbilical stump, is a common cause of morbidity and mortality in neonates in the developing world. Over 4 million neonatal deaths occur annually, of which 36 percent are attributed to neonatal infections. In high neonatal mortality areas, this rate can be as high as 50 percent.

Technology solution

Between November of 2002 and March of 2005, Johns Hopkins University (JHU) conducted a community-based study in Nepal on topical application of chlorhexidine (CHX) to the umbilical cord for prevention of omphalitis and neonatal mortality. This study showed that newborns who received umbilical cord cleansing with a 4.0 percent solution of CHX had a lower mortality rate by 34 percent. These successful results demonstrated a significant reduction of neonatal mortality. A similar follow-on study is being planned for Bangladesh.

Recommendations from the 2005 meeting of the Chlorhexidine Working Group, sponsored by United States Agency for International Development (USAID), identified chlorhexidine as an inexpensive and simple intervention that has the potential to reduce a major cause of perinatal morbidity and mortality in developing countries. Cord infections contribute significantly to high neonatal mortality rates in developing countries, which can be reduced by practicing clean delivery and clean cord care, by avoiding harmful practices, and by increasing tetanus toxoid immunization coverage. The use of CHX could enhance the potential for such a reduction in neonatal mortality as it is a low cost, readily available drug that can be easily administered by unskilled birth attendants outside of clinics and hospitals.

Current status and results

PATH's current project focus is to assist in making an appropriate and affordable chlorhexidine product for cleansing umbilical cords available in Nepal, and to apply lessons learned in Nepal worldwide through the creation of a production development tool. Currently, in Nepal, PATH is working with local partners to develop a strategy for product scale-up and eventual introduction at the national level. PATH is determining the most culturally appropriate product and packaging specifications and optimal supply and distribution networks for a chlorhexidine product. In addition, PATH is identifying the most suitable regulatory and quality assurance strategies for the product. In 2007, PATH will undertake a landscape analysis to identify feasible sources, manufacturers, and packaging options of CHX that could be easily adapted to low-resource settings with an aim towards preparing for global and/or regional manufacturing capabilities immediately upon the receipt of favorable results from a community-based trial in Bangladesh.



Richard Lord

“We believe that the use of 4% chlorhexidine for topical cord antiseptics represents an important intervention with the potential for substantial effect on public health.”

Mullany L, et al. Topical application of chlorhexidine to the umbilical cord for prevention of omphalitis and neonatal mortality in southern Nepal: a community-based, cluster-randomised trial. *The Lancet*. 2006;367:910-918.

Availability

For more information regarding this project, contact Patricia Coffey at pcoffey@path.org.

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