



## Life saving pneumonia, meningitis vaccine developed

Story by CORRESPONDENT

For the first time, a vaccine against deadly pneumonia –a major headache for every parent–has been shown to dramatically reduce the number of deaths caused by the disease.

In a study, done in The Gambia and published in *The Lancet*, 17,000 infants were vaccinated against the bacterium that causes deadly pneumonia and meningitis and cut all causes of child death by 16 per cent.

"This is the first time we have really had proof that the vaccine prevents pneumonia, meningitis and bloodstream infection deaths and complications in a rural Sub-Sahara Africa setting. Earlier studies in the US and South Africa have shown that such vaccines work," says Dr Wamae Maranga, the manager for the Network for Surveillance of Pneumococcal Disease in the East Africa Region -netSPEAR.

In the four-year study in The Gambia, supported by a broad coalition of international partners including the World Health Organisation, the pneumococcal vaccine not only reduced deaths, but hospitalisations and cases of pneumonia, meningitis and bloodstream infections.

The vaccine was 77 per cent effective in preventing infections caused by the pneumococcal germ, which causes a dangerous form of pneumonia as well as meningitis and septicaemia.

Cases of pneumonia as confirmed by chest X-ray fell by 37 per cent among vaccinated children, and incidence of meningitis and septicaemia plummeted by half. All causes of mortality fell by 16 per cent. The pneumococcal conjugate vaccine, made by Wyeth Pharmaceuticals, was previously tried in the United States and is being routinely used to vaccinate children in there.

"The results of this vaccine trial hold great promise for improving health and saving lives in resource-poor populations," said Dr. Lee Jong-wook, the director general of the World Health Organisation.

"The international community's task now is to continue to work together productively to make the vaccine widely available to children in Africa, as lives are lost every minute to pneumonial diseases. Immunizing children with this vaccine in developing countries will be a critical intervention towards achieving a two-thirds reduction in the under-five mortality rate, a Millennium Development Goal."

Also significantly, says Dr Wamae, is that the vaccine reduces the need for hospitalization with children receiving the vaccine having 15 per cent fewer hospital admissions than those who did not.

"This means mothers will not drop their other economic activities to stay with the child at the hospital and the region poorly resourced public hospital will have fewer cases of admission to deal with."

*Streptococcus pneumoniae* are bacteria that are frequently found in the upper respiratory tract of healthy children and adults. These bacteria, however, can also cause a range of infections- from relatively mild ear infections to fatal pneumonia, meningitis, and sepsis.

Serious pneumococcal infections can occur throughout life, but children under two years old and the elderly are at highest risk. Serious pneumococcal infections are a major global health problem.

The World Health Organization estimates that more than 1.6 million people-including more than 800,000 children under five-die every year from pneumococcal infections. Nearly all of these

deaths occur in the world's poorest countries.

Meningitis is the most severe form of pneumococcal disease and one of the most fatal childhood illnesses. In developing countries it kills or disables 40 to 70 per cent of children who get it.

The primary causes of death from pneumococcus are pneumonia, in which fluid fills the lungs, hindering oxygen from reaching the bloodstream; meningitis, an infection of the fluid surrounding the spinal cord and brain; and sepsis, an overwhelming infection of the bloodstream by toxin-producing bacteria.

In the recent past pneumococcal infections have become more difficult to treat as bacteria become resistant to some of the most commonly used antibiotics. Antibiotic resistance has economic, as well as clinical consequences.

Overuse of antibiotics leads to increased resistance and threatens the effectiveness of existing therapy, which in turn increases the cost of treatment by requiring the use of more expensive antibiotics.

New, lifesaving pneumococcal vaccines are safe and highly effective in preventing pneumococcal disease. Since 2000, when US infants began receiving routine vaccination against pneumococcal disease, the country has nearly eliminated childhood pneumonia caused by vaccine serotypes.

netSPEAR, says Dr Wamai, is currently collecting local data to determine the suitability of using the vaccine locally depending on the strains of the pneumonia causing bacteria it is developed to contain.

In addition, vaccination of infants has reduced the spread of pneumococcal bacteria so that adults have less contact with pneumococci and are thus indirectly protected from pneumococcal disease.

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