Report of highest incidence of GBS in Africa prompts vaccine study

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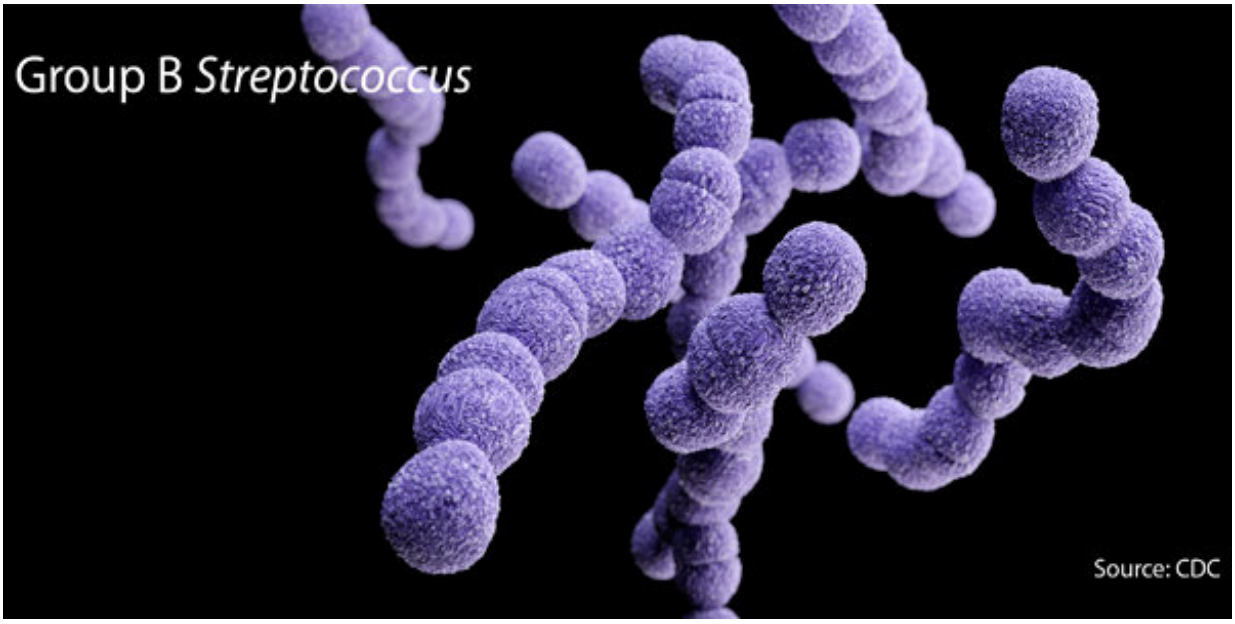

Group B Streptococcus is bacteria that cause stillbirths and invasive disease and infant death. The most comprehensive analysis of GBS released on 6 November 2017 shows the highest incidence of GBS is in Africa. Credit: CDC

A global study of GBS, bacteria that cause stillbirth and infant death, shows that Africa has the highest incidence. Wits University is pioneering a vaccine.

Scientists at the Wits/Medical Research Council Respiratory and

Meningeal Pathogens Research Unit (RMPRU) have contributed to the first comprehensive study of Group B Streptococcus (GBS), which are bacteria that infect pregnant women and cause stillbirths and severe invasive disease and death in infants.

Africa has the highest burden of GBS with 54% of estimated cases and 65% of stillbirths and infant deaths.

The GBS burden of disease analysis involved more than 100 researchers from around the world and the published supplement comprises 11 research papers. Conservative estimates show that GBS infection causes some 150,000 preventable stillbirths and infant deaths every year.

Professor of Vaccinology, Shabir Madhi, who is director of the RMPRU, the DST/NRF SARChI Chair in Vaccine Preventable Diseases, and Executive Director of the National Institute for Communicable Diseases, contributed to the study.

"This research is especially important for South Africa, where the highest incidence of invasive GBS in young infants globally has been reported for the past 20 years. Furthermore, we have shown recently that at least 1250 South African women will have a stillbirth due to GBS each year," says Madhi.

The GBS burden of disease analysis, funded by the Bill & Melinda Gates Foundation, includes data and estimates for the year 2015 from every country worldwide and includes outcomes for pregnant women, their babies and infants. Previous data on GBS burden focused on infant cases and high-income countries, but the impact of GBS disease worldwide, especially in Asia, was less clear.

The new research found GBS colonise the rectum and vagina of pregnant women in all regions of the world, and an average of 18% of

pregnant women worldwide carry (are colonised with) GBS, ranging from 11% in eastern Asia to 35% in the Caribbean, and totalling 21.7 million in 195 countries.

Although several vaccines to prevent GBS are in development, none is currently available - this despite GBS accounting for more than the combined neonatal deaths from tetanus, pertussis, and respiratory syncytial virus, for which maternal vaccines are already in use or further advanced in development.

The GBS burden of disease analysis shows for the first time that a maternal GBS vaccine, which was 80% effective and reached 90% of women, could potentially prevent 231,000 infant and maternal GBS cases.

Madhi and his team at the Wits MRC Respiratory and Meningeal Pathogens Research Unit recently completed the first study of an investigational GBS vaccine in pregnant women, the results of which were published in the prestigious *Lancet Infectious Diseases* journal. The unit is also investigating the potential of other components of GBS as potential vaccine targets.

Dr Keith Klugman, Director of the Pneumonia Team at the Bill & Melinda Gates Foundation and Wits Medical School alumnus, says: "The first few days and weeks of a baby's life are the most vulnerable by far. By filling in one of the great voids in public health data, this work provides crucial insight and shows the pressing unmet need for the development of an effective Group B Strep vaccine. Immunizing expectant mothers is a potentially ground-breaking approach that could dramatically reduce the number of maternal and child deaths."

Provided by Wits University