

Current major events

Men A Conjugate Vaccine:

Could it change epidemiology of meningococcal meningitis in Africa?

Phase 2 clinical study to assess safety and immunogenicity of meningococcal A (Men A) conjugate vaccine is currently ongoing in Mali and Gambia. The results of the study, which covers children 12- to 23-month-old (the younger age group targeted by mass vaccination campaigns), is expected to be available during the first quarter of 2008.

Other studies targeting 2- to 29-year-old (the older age group targeted by the mass vaccination campaigns) are currently going on in four countries: Mali, Gambia, Senegal, and India.

Editorial note

Neisseria meningitidis (*N. meningitidis*) group A is the dominant pathogen causing epidemic meningitis in the African “meningitis belt”. Despite antimicrobial therapy, about 10% of cases of meningitis die, typically within 24–48 h after the onset of symptoms. Another 10–20% of survivors are left with major neurologic sequelae such as mental retardation, hearing loss, and seizures.

Over the last two decades, the WHO approach for control of meningitis epidemics in sub-Saharan Africa is based on early detection of cases and emergency mass vaccination of the population at risk with meningococcal polysaccharide (PS) vaccines. Meningococcal PS vaccines have important limitations; they have limited efficacy in infants and young children, do not decrease carriage, and do not confer herd immunity.

Conversely, the newly developed polysaccharide conjugate vaccines are effective in infants and have consistently shown an important effect on decreasing carriage, two characteristics that facilitate disease control. Plain polysaccharide vaccines are B cell-dependent antigens, they are not able to prime immunologi-

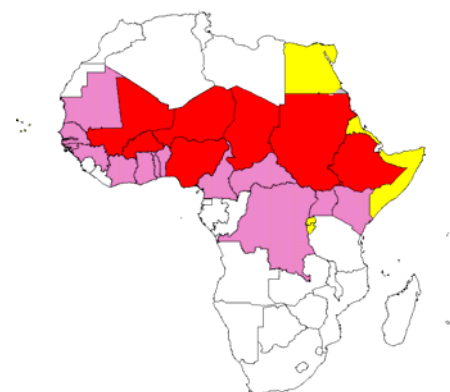
Milestones:

- Phase 1: (testing of sera by the U.S. Food and Drug Administration and by the U.K. Health Protection Agency) confirmed higher immunogenicity of Men A conjugate vaccine as compared with polysaccharide vaccine in adults.
- In October 2007, meningitis experts, vaccine manufacturers, and several partners discussed introduction of Men A conjugate vaccine in Africa.
- The GAVI Board Alliance will consider supporting introduction of Men A conjugate vaccine and building a stockpile of polysaccharide vaccine at its meeting in June 2008.

In addition, a study protocol for use of Men A conjugate vaccine in infants has entered the ethical and regulatory submission process. The study could start as early as June 2008 in Africa.

cal memory and are poorly immunogenic in infants and young children, and their protection is relatively short lasting. The coupling of polysaccharides to a carrier protein transforms PS into T cell-dependent antigens that are capable of priming immunological memory and are immunogenic in infants.

Meningococcal A (Men A) conjugate vaccine is being made affordable (US\$ 0.40 per dose) through an innovative international partnership that saw transfer of a conjugation and fermentation technology to a developing country vaccine manufacturer. A Phase 1 study of the vaccine in India has shown that the product is safe and immunogenic. Phase 2 studies have begun in Africa, and a large demonstration study of the conjugate vaccine is envisioned for 2008–2009. Men A conjugate vaccine will be incorporated into standard Expanded Programme on Immunization (EPI) schedules together with mass vaccination of 1–29 years old to induce herd immunity, a strategy that has been shown to be highly effective when the meningococcal C (Men C) conjugate vaccine was introduced in several European countries.



Meningitis belt countries in Africa

- Meningitis Countries with high incidence rate $n=7$
- Meningitis Countries Broad Belt $n=14$
- Meningitis Countries Out of Belt $n=6$

Update on outbreaks

in the Eastern Mediterranean Region

Cholera: Beled Weyne, Somalia. **Venooclusive disease of unknown etiology:** four villages in Gulran district, Afghanistan (*currently under investigation*)

Current public health events of international concern

[cumulative N° of cases (deaths), CFR %]

Avian influenza

| | |
|-----------|--------------------|
| Egypt | [47 (20), 42.5%] |
| Indonesia | [129 (105), 81.4%] |
| Viet Nam | [106 (52), 49.1%] |

Cholera

| | |
|------------|--------------------|
| D.R. Congo | [4343 (126), 2.9%] |
| Somalia | [477 (4), 0.8%]* |
| Namibia | [75 (1), 1.3%] |

Dengue Fever

| | |
|--------|------------------|
| Brazil | [406 (34), 8.3%] |
|--------|------------------|

Lassa Fever

| | |
|---------|----------------|
| Nigeria | [5 (3), 60.0%] |
|---------|----------------|

Yellow Fever

| | |
|-----------|-----------------|
| Paraguay | [26 (8), 30.7%] |
| Argentina | 5 (1), 20.0% |

(* = Unofficial figures)

CFR = Case-Fatality Rate