Meningitis outbreak in West Africa

Several western African countries are currently facing a major meningitis outbreak. Hundred of teams from the Ministries of Health and Médecins Sans Frontières (MSF) are mobilized to treat and vaccinate. In Nigeria, Niger and Chad, MSF is working closely with the authorities to organize mass vaccination campaigns for a target population of over 7 million people.

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Salissou Souley, a 7 year old boy, is suffering from meningitis and malaria. He has been hospitalised in Aguié, Maradi district. MSF doctor, Emma Manfrin, is examining him. During epidemics in endemic regions, bacterial meningitis is typically a disease affecting children over six months, adolescents and young adults. It is rare in people over the age of 30.

Meningitis outbreaks are a common occurrence in western African countries located in the “meningitis belt.” However this year’s outbreak has reached an even larger scale. According to the figures from the Ministries of Health, over 1 900 people infected by meningitis have died since the beginning of the year in Nigeria, Niger and Chad. While the situation is improving in some places where vaccination campaigns have been carried out, the epidemic continues to spread in other areas.

The worst epidemic in years. In Nigeria, this is the worst epidemic since 1996. MSF has been working in collaboration with the Ministry of Health in 9 states (see the map). More than 50 000 cases (1 500 deaths) have been recorded by joint MSF / Ministry of Health teams, who are visiting health facilities to treat patients, organize supplies of drugs and collect epidemiological data. Activities are finished or finishing in some states but in some other states, the number of meningitis patients is still increasing in some areas.
“People only see the vaccination. This is indeed what will “break” the spread of the epidemic. However without the case management of patients affected by the meningitis, it would be a disaster in terms of number of the lives lost.”
Nico Heijenberg, MSF Doctor in Magaria

If left untreated, bacterial meningitis kills up to 50% of infected patients. Even when the illness is diagnosed quite early and treated with appropriate antibiotics, five to ten percent of patients die, generally less than 48 hours after symptoms appear. In addition, one out of every five people will experience neurological after-effects such as deafness, hemiplegia, facial paralysis or mental disability.

Fortunately, this epidemic has not been as deadly in Nigeria: around 97 percent of patients suffering from meningitis have survived. Patients are receiving the treatment relatively quickly and the bacteria are more sensitive to the drug.

You can tell when you approach a health facility which child has meningitis because of their position. They don’t even want to move. Their eyes are covered because the light hurts, they are breathing quickly because they have a fever or they are in pain. But there is a big difference once they have received the treatment.

Susan Umstat MSF nurse, Zamfara, Nigeria
Massive vaccination. To limit the spread of the epidemic, vaccination campaigns are being carried out in collaboration with the Ministries of Health in the areas where the epidemic threshold has been reached. **Epidemics are moving fast, so good reactivity is required:** to be effective, a vaccination campaign must be done as early and as quickly as possible. The resources used are very important. For example in the Zinder region, which constitutes a third of the total number of meningitis cases in Niger, more than 8 000 ice packs have to be frozen every night to be used by the 65 vaccination teams. A team of 5 people can vaccinate up to 1 500 people per day. The vaccination targets the population aged between 2 and 30 years old.

In, total around 5.5 million people have been vaccinated (3 in Nigeria and 2.5 million in Niger) and additional campaigns for around 1.8 million are ongoing in Chad, Niger and Nigeria.

Usually a decrease in the number of new cases occurs two weeks after the vaccination.

The protection is fully effective 10 to 14 days after the vaccination, if the vaccines have been kept between 2 and 8 degrees Celsius.

**A new vaccine available soon**

There are different polysaccharidiques vaccines which can combine several serogroups (among them A/C and A/C/W135). Unfortunately they only offer a limited protection for three years. In addition, they are not recommended for children under the age of two.

A new conjugate vaccine for the A strain of meningitis (MenAfriVac) should be gradually introduced starting at the end of 2009. Affordable (0.40 euros), it is said to be much more efficient and last for much longer than the vaccine currently used even for children under two. Clinical tests are underway. The WHO’s objective is to vaccinate 250 million people from 1 to 29 years old and 23 million newborns before 2015 in the meningitis belt. The A strain of meningococcal meningitis is one of the major sources of epidemic outbursts.

**MSF emergency figures in Nigeria, Niger and Chad**

- 187 MSF expatriates
- 3 747 national staff
- 8 million vaccines ordered by MSF
- 270 vaccination teams during the peak
- 1.5 euros per person vaccinated (cost of the vaccine not included)
MEDICAL INFORMATION

In sub-Saharan Africa, meningitis strikes in the area commonly called the meningitis belt, from Senegal in the west to Ethiopia in the east, where 300 people million live. From 1995 to 1997, Africa experienced its biggest ever meningitis epidemic. More than 250 000 people were affected and 25 000 died.

Several types of meningitis: The origin of meningitis can be viral (80% of cases) or bacterial. The meningococcal strain (Neisseria meningitides) is the only type of bacterial meningitis which can lead to an epidemic. Serogroup A is most often responsible for epidemics in Africa, while serogroup B predominates in the meningitis that is endemic in Europe. Serogroup C is most frequently encountered in the United States.

Meningitis season. Meningitis may occur in any season, but dry climactic conditions promote its spread. Dry air, dust and wind irritate the throat, which can no longer act as a barrier, thereby allowing the bacteria to penetrate the body more easily. The “meningitis season” in the African belt is from December to June.

The infection is transmitted only by humans, through droplets of saliva. According to the World Health Organization, between 10 and 25% of the population worldwide carries the meningococcal bacteria, but the vast majority are not ill (healthy carriers). Nine carriers out of 10 develop antibodies so are protected against the illness, but may infect others during five to 15 week period.

After an average incubation period of three to four days, meningitis symptoms include sudden and intense headache, high fever, nausea, vomiting and, characteristically, neck stiffness. Light sensitivity may also occur. Serious cases also include neurological signs, such as a fever-induced coma and convulsions. More rarely, the infection may evolve into “purpura fulminans” (necrosis, spread of subcutaneous hemorrhage and circulatory failure).

Specific treatment during an epidemic. The treatment involves administering antibiotics as quickly as possible. During epidemic periods, a specific protocol is implemented. It allows large numbers of patients to be treated quickly in order to limit the number of deaths and the proportion of after-effects. For suspected cases over 2 years of age, a single dose of oily chloramphenicol via intramuscular injection, or a single dose of Ceftriaxone, usually works quickly (in more than 80% of cases). If necessary, a second injection may be given 24 hours later.