MENINGOCOCCUS A - MENINGITIS

Meningitis caused by **group A** meningococci is **hyperendemic** in the so-called meningitis belt, a 600 km wide semi-desert zone (Sahel) in sub-Saharan Africa extending from Mauritania, Gambia and Senegal into Ethiopia. The occurrence of meningococcal meningitis **epidemics** is **seasonal, beginning during the cooler dry months from December to February, and ending at the beginning of the rainy season in June-July**. Due to the cooler temperatures the local population lives closer together in more overcrowded conditions, which promotes the occurrence of epidemics. During the last few years epidemics have been reported in various West African countries as well as in Ethiopia and Sudan, occasionally spreading to surrounding areas in Angola, Burundi, Congo, Uganda, Kenya and Tanzania, Malawi and Mozambique. A few other parts of the world can also be regarded as hyperendemic, such as areas in Mongolia (epidemic in 1993) and central China. Here the risk is not seasonal. In the last 10 years epidemics have also been reported in other Asiatic countries such as Northern India (around New Delhi) and Nepal, as well as in Saudi Arabia (Mecca pilgrims).

Vaccination indications:

- The vaccine is indicated for individuals who travel at least 4 weeks in rural areas or who stay in countries where meningitis is highly endemic **(from December to July in the countries of the Sub-saharan meningitis belt)**, and where they will live together in close contact with the local population.
- Vaccination is obligatory for pilgrims to Mecca and Umra (Haj). It must be given 10 days before the trip and remains legally valid for 3 years.
- During a short stay in an area where at that time an epidemic is reported, ordinary tourists in fact run no real risk (no more than at home, unless they are in close contact with the population). The World Health Organization recommends that vaccination should be considered here, and so these tourists can be vaccinated.
- Individuals who have had their spleen removed or whose spleen no longer functions should preferably be vaccinated, even if they stay for only a short time in one of the risk countries.

Chemoprophylaxis (preventive administration of an antibiotic) for meningococcal meningitis has no place in travel medicine.

Vaccination scheme:

The vaccine Mencevax® A-C-Y-W135 is simultaneously active against the serogroups A, C, Y and W135. It is a tetravalent purified capsular polysaccharide-based vaccine. A single

subcutaneous injection of 0,5 ml suffices, with a booster injection after 3 years, and then every 5 years. This vaccine is in principle administered from the age of 2 years. Protection becomes effective from the 10th day. A vaccine against meningitis B (the principal pathogen of meningococcal meningitis in Belgium) does not yet exist.

Contraindications:

Severe acute infections. A mild feverish condition is not a contraindication to the vaccine.

Pregnant women (this concerns a theoretical risk: if there is a high risk of infection pregnant women should certainly be vaccinated).

Side effects:

Some local reaction is possible, but systemic reactions (fever in the 24 hours following the vaccination) are rare. The side effects are always mild and short-lived.

Vaccination in children and babies

The vaccine is in principle administered from the age of 2 years. However, children from 3 months to 12 months old are usually the principal victims of meningococcal sepsis and/or meningitis. In these children the antibody response to vaccination is however very low.

- **The meningococcus A component** is 85 to 95% effective for at least 1 year in individuals of more than 4 years of age. Under the age of 3 months the antibody production after vaccination is still very low to absent, increasing gradually from the age of 3 months up to 4 years. According to an informal recommendation of the W.H.O. the vaccine can nevertheless be administered to young children from the age of 3 months as follows when there is a real risk of meningitis due to meningococci A (epidemic): after the first injection from an age of 3 months, a repeat vaccination is given after 3 months, then after 18 months, and then after 3 years.
- **The meningococcus C component** is hardly active under the age of 2 years, no more than the **meningococcus WY component**. **A conjugated monovalent meningococcus C vaccin** that is also effective in children under the age of 2 years (from the age of 2 months) is now available on the Belgian market. However, this vaccine protects only against the C-serogroup. As such it cannot be used in travel medicine, as the risk of meningococcus C infection while travelling is no greater than in Belgium, and is usually even somewhat lower. An interval of *6 months* must normally be taken into consideration between the administration of the polysaccharide ACWY vaccine and the subsequent administration of the conjugated monovalent meningococcus C vaccine.

Children who are exposed to a high risk can best first be vaccinated with the conjugated C vaccine and *2 weeks* later with the polysaccharide vaccine.

- If necessary (in areas where there is a risk of meningococcus A) the **ACWY vaccine** can be administered to children from 3 months of age (see under meningococcus-A component): a repeat vaccination should then be given after 3 months, after 18 months and after 5 years.
- Upon vaccination of children from 2 to 5 years old a 2nd dose is administered 1 year after the 1st dose; a repeat vaccination should be given after 3 years, and then every 5 years if indicated.

Note: There are now available effective vaccines against *Haemophilus influenza* type b, which is likewise a dreaded bacterial meningitis pathogen in children (up to 5 years of age).