

Meningococcal Meningitis in Africa

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This informative paper reviews the history, epidemiology, diagnosis, treatment and prevention of epidemic meningococcal disease in Africa. The first proven outbreak of the disease occurred in Northern Nigeria in 1905, and may have been caused by meningococci introduced from the Sudan by pilgrims or travellers. In 1906 an epidemic was reported in the Gold Coast (Ghana) which by 1908 had spread west into territories under French colonial rule. Outbreaks of meningococcal meningitis have occurred across the region every few years ever since. During epidemics attack rates as high as 1:10 of the population have been reported, but even these have been considered to be an under estimate as many patients with meningococcal septicaemia die before they can reach medical help.

Most epidemics up until the publication of this paper were caused by serogroup A meningococci, although serogroup C have also contributed. The appearance of serogroup W135 is a more recent phenomenon. The clinical features of meningococcal disease in Africa do not differ significantly from any other part of the world, however the proportion of cases with septicaemia is difficult to document as many die before they reach medical help. Microbial diagnosis is important because, amongst other things, if vaccination is to be contemplated, then the precise serogroups must be known.

Before 1938 there was no effective treatment for meningococcal meningitis in Africa and mortality was around 80%. The discovery that treatment with sulphonamides could reduce mortality to 10% was a major breakthrough, but by the early 1970s bacterial resistance to this antibiotic had spread throughout the meningitis belt and thus it could no longer be used for treatment. Successful treatment can be afforded by parenteral penicillin administered over several days, which is the recommended treatment in industrialised countries, however this regimen is difficult to achieve in epidemic situations. The introduction in 1975 of a single dose of oily chloramphenicol has now saved thousands of lives. Early attempts to control meningococcal meningitis met with only limited success because of the rapid spread of disease and vaccination was often started too late to be properly effective. The formation of the International Coordinating Group by the WHO, International Red Cross and vaccine and syringe manufacturers, a new initiative at the time of the publication of this paper, greatly improved the situation by contributing to better surveillance and ensuring vaccine and equipment supplies.

The paper concludes with the forecast that the best prospect for the control of epidemic meningitis in Africa lies with the development of polysaccharide-protein conjugate vaccines, which are more immunogenic and induce immunological memory. Since the publication of this paper major steps have been taken toward the development of the conjugate serogroup A vaccine by the Meningitis Vaccine Project, a Gates Foundation funded initiative by the WHO and PATH Europe.