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MASELS

Die maselvirus word deur vogdruppeltjies uit die lugweë versprei en in internasionale studies oor siekte-toestande word masels derhalwe as 'n asemhalingsiekte bestempel. Die virus beland in die lugweë en dring deur die limf tot in die bloed (*viraemia*) en uiteindelik tot in die retikulo-endoteelstelsel. 'n Paar dae voordat die uitslag verskyn, ontwikkel 'n tweede viremie. Die bloed bly aansteeklik tot 1 of 2 dae na die uitslag.[1] Binne 2 dae nadat die uitslag verskyn neem die viremie af na mate die teenliggame vermeerder. As die uitslag eers geheel en al uitgebreek het, kan die siekte nie maklik oorgedra word nie;[2] ná hierdie stadium is die beskerming teen sekondêre bakteriese besmetting die grondigste rede om maselpasiënte af te sonder.

Masels op sigself is selde noodlottig; kragteloosheid of sterfgevalle is aan komplikasies wat intree te wyte. Dit word beweer dat meer as 90% van die sterfgevalle in die Verenigde State die gevolg van bakteriese longontsteking is. In baie dele van die wêreld, en op verskeie tye, kan otitis media of ander komplikasies die uitstaande kenmerke wees. Sover dit hierdie komplikasies aangaan, is hul beloop deur die antibiotika verander. Vir maselharsingontsteking, wat gelukkig selde voorkom, is antibiotika-terapie egter van geen waarde nie, alhoewel groot dosisse gamma-globulien gepaard met ander maatreëls (vloeistowwe, elektroliete, koorsweermiddels, kalmeermiddels en suiging om verstikking te verhoed) waardevol is.[3] Die gebruik van gamma-globulien as 'n voorbehoedmiddel weer nie noodwendig harsingontsteking af nie.

In die Westerse lande het die sterftesyfer vir masels opvallend gedaal. Dit word algemeen aanvaar dat hierdie daling 'n aanvang geneem het voordat sulfonamiede en antibiotika in gebruik was. Gevolgtrekkings i.v.m. die siektetoestand in en selfs die sterftesyfers van verskillende lande moet nie oorhaastig gemaak word nie want lande verskil in die deeglikheid waarmee hul verslae oor masels opstel.

Babbott en Gordon [2] het 'n omgewingsleer-ontleding gemaak d.w.s. 'n georganiseerde ondersoek ingestel na alle faktore i.v.m. die siekte se gedrag. Hul lê bewyse voor wat die stelling staaf dat die siekte deur 'n virus veroorsaak word en verduidelik hoedat dit in die laboratorium ondersoek is. Die virulens kan in die laboratorium verander word maar dit skyn asof die graad van kwaadaardigheid waarmee 'n masel-epidemie uitbreek eerder aan sekundêre bakteriese infeksie, die mate van

EDITORIAL

MEASLES

The virus of measles is spread in droplets from the respiratory tract, and the disorder is therefore classified as a respiratory disease in international morbidity studies. The virus enters the respiratory tract and passes through the lymphatics into the blood (viraemia) and eventually into the reticulo-endothelial system. A second viraemia develops some days before the rash appears. The blood remains infective until 1 or 2 days after the exanthem.[1] The viraemia diminishes within 2 days after the rash appears, as antibodies increase. Once the rash has fully developed the disease is not easily transmitted,[2] and after this stage the best reason for isolating patients with measles is to protect them from secondary bacterial infection.

The complications in measles are determining factors in causing death or debility, measles itself being seldom fatal. In the United States it is stated that more than 90% of deaths from measles are due to bacterial pneumonia. In many parts of the world, and at different times, otitis media or other complications may be prominent features. The introduction of antibiotics has altered the picture so far as these complications are concerned, but for measles encephalitis, which fortunately only occurs infrequently, antibiotic therapy is without value, though large doses of gamma globulin with other measures (fluids, electrolytes, antipyretics, sedatives, and suction to prevent asphyxia) are of value.[3] The use of gamma globulin as a prophylactic agent does not necessarily prevent encephalitis.

In the western world there has been a conspicuous decline in the mortality from measles. It is generally agreed that the declining trend began before the introduction of sulphonamides and antibiotics. Caution, however, is necessary in drawing conclusions about morbidity and even mortality statistics in different countries. Measles is reported in varying degrees of thoroughness in different parts of the world.

An ecological analysis of measles, i.e. an organized inquiry into all factors relating to the behaviour of the disease, has been presented by Babbott and Gordon.[2] They marshall evidence that a virus is the cause of the disease, and indicate how it has been studied in the laboratory. The virulence can be altered in the labora-

immuniteit en geneeskundige behandeling onderworpe is. Dit is terdeë bewys dat tydens onlangse epidemies skadelike kieme vir die meeste sterfgevalle en komplikasies verantwoordelik was. Benewens faktore wat by die gasheer te vinde is (immuniteit) is die sosio-ekonomiese en biologiese agtergrond van belang. Skole het 'n groot aandeel in die verspreiding van die siekte. Kinders op skool wat in epidemies betrokke is, dra die masels oor aan hul broertjies en sussies tuis en die meeste komplikasies kom by kinders van voorskoolgaande ouderdom voor.

Aktiewe immunisasie met die gekweekte virus blyk onbevredigend. Beter resultate word met passiewe immunisasie verkry bv. met gamma-globulien (wat serum van herstellende pasiënte of ‚pooled' plasma of serum vervang het). Dit kan gebruik word tydelik om òf algehele beskerming òf gedeeltelike immunisasie te bewerkstellig. Laasgenoemde verseker dat die maselaanval lig is sodat die pasiënt die gevare verbonde aan 'n swaar aanval vryspring maar nogtans die aktiewe immuniteit ontwikkel wat op 'n aanval volg. Algehele beskerming word vir kinders tussen 4 maande en 36 maande aangeraai asook vir swak kinders en vatbare volwassenes. Vir ander kinders word oor die algemeen gedeeltelike immunisasie aanbeveel omdat hierdie passiewe immunisasie verbygaande van aard is en die immuniteit wat daarop volg met dié van 'n ligte maselaanval kan vergelyk. Dit word gemeen dat gamma-globulien nie die virus van homoloë serumgeelsug oordra nie en dít word derhalwe veiliger beskou as serum van herstellende pasiënte of ‚pooled' plasma of serum.

Dit kom voor asof isolasie en kwarantyn die verspreiding van masels maar in 'n geringe mate beheer. Die meeste gesaghebbendes is dit eens dat dit maar bra min help om skole tydens epidemies te sluit; die aanbeveling is dat kinders elke dag by die skool ondersoek moet word en diegene met ‚verkoues' of koors geïsoleer word.

Die daling in die maselsterftesyfer wat in Suid-Afrika en ander lande bespeur is—maar wat op baie groter skaal vir die blanke-syfer geld—kan aan 'n verandering in die virus te danke wees of dit kan meer regstreeks in verband gebring word met die daling in die sterftesyfers vir longontsteking en ander asemhalinginfeksies. Die sterftesyfers vir kinkhoes, waarvoor longontsteking-komplikasies verantwoordelik is, toon 'n dergelike daling.

Die standpunt word deur sommige gehuldig dat masels net soos pampoentjies, waterpokkies, en rooihond in die toekoms somaar 'n alledaagse ongerief van die kinderjare sal wees en slegs af en toe onder buitengewone omstandighede 'n noemenswaardige gebeurtenis.

1. Goldberger, J. en Anderson, J. F. (1911): J. Amer. Med. Assoc., **57,** 476.
2. Babbott, F. L. en Gordon, J. E. (1954): Amer. J. Med. Sci., **228,** 334.
3. Bendz, P. en Engstrom, C. G. (1953): Amer. J. Dis. Child., **86,** 772.

tory but the differing severity in outbreaks of measles appears to depend more upon the secondary bacterial infection, the degree of immunity, and the medical management. Most deaths and complications have been amply demonstrated in recent epidemics to result from pathogenic bacteria. In addition to factors in the host (immunity) the physical, socio-economic and biological environment are important. Schools play a great part in the spread of the disease; from the children involved in school epidemics measles spreads to their brothers and sisters at home and it is at pre-school age that complications are most frequent.

Active immunization with cultivated virus has not proved satisfactory. Better results have been obtained by passive immunization, for example with gamma globulin, which has superseded convalescent serum and pooled plasma or serum. It can be used to induce either temporary complete protection or a partial immunity which causes the attack of measles to be mild in character so that the patient while escaping the jeopardy of a severe attack still develops the active immunity which follows the attack. Complete protection has been advised for children between 4 months and 36 months old and for debilitated children and susceptible adults. In other children, because of the transient nature of this passive immunity, attenuation is generally to be preferred. The immunity which then follows is considered to be comparable to that following unattenuated measles. Gamma globulin is believed not to transmit the virus of homologous serum jaundice, and it is therefore regarded as a safer preparation than convalescent serum or pooled plasma or serum.

Isolation and quarantine have proved to be of little use in controlling the spread of measles. Most authorities also hold that school closure is of little value during an epidemic;[2] daily examination of the children at school and isolation of those with 'colds' or fever is advocated.

The decline of measles mortality, which is apparent in South Africa as well as other countries but is much more pronounced in the white population, may be due to a change in the virus, or it may be more directly associated with the corresponding decline in mortality from pneumonia and other respiratory infections. A similar decline has taken place in whooping-cough mortality, which is also commonly due to pneumonic complications. The view is held by some that one day measles, like mumps, chickenpox and rubella, may become an accepted inconvenience of childhood, of special significance only occasionally or under unusual conditions.

1. Goldberger, J. and Anderson, J. F. (1911): J. Amer. Med. Assoc., **57,** 476.
2. Babbott, F. L. and Gordon, J. E. (1954): Amer. J. Med. Sci., **228,** 334.
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AGRICULTURE AND HEALTH

In this issue is published the last of a series of 12 articles on the Agricultural Foundations of Nutrition, by F. W. Fox, D.Sc. Lond., of the South African Institute for Medical Research, Johannesburg.

Food, with air, water and protection against cold, was a basic necessity of life for primitive man. It was subject to scarcity, and the procuring of food must have occupied much of his time, whether by hunting, fishing and the

search for edible wild fruits and vegetables, or later by the practice of agriculture. At first the individual family or tribal community must have grown their own food or caught their own fish or game, but as civilization advanced gradually more and more of the food the people needed was grown and sold by specialized agriculturalists. A similar change took place in distribution. At first every town and village was supplied from its own countryside, but in course of time and with improvement in transport facilities the system was elaborated whereby the needs of civilized communities were met with food from distant parts of their own countries or from other countries, some of them at the other end of the world. In primitive times failure of the local harvest would result in famine. With national and international systems of food production and transport, abundance balances scarcity and famine is avoided; yet to the present generation famine is not unknown in countries like India, and, in time of war, in Europe.

The medical profession is intimately concerned with nutrition. Knowledge of the physiology of nutrition has advanced greatly in recent years and also knowledge of the ill effects of insufficient or unsuitable food and their manifestations in disease. All countries realize that proper nutrition is a fundamental requirement of their people and the production of food is not left merely to the unaided resources and uncontrolled initiative of the individual farmer or other producer, but becomes the subject of national policy; so also does the distribution and consumption of food. In the shaping of national policy in these respects medical counsel is being taken to a growing extent.

In the last resort all nutrition policy must depend on its agricultural foundations, in which therefore the members of the medical profession are directly interested. The South African peoples are afflicted with nutritional disorders characteristic both of the white and black populations of the world; and the agricultural tasks of South Africa include problems both peculiar to itself and common to other countries. South Africa though not in fact entirely self-supporting in its nutrition is potentially able to feed its growing population provided that by diligent attention to the complex problems involved the fertility and productiveness of its soil are maintained and increased.

Dr. Fox's series of articles are a valuable contribution to knowledge of the position of food production in this country and the problems that have to be faced. It is satisfactory to know that the Institute for Medical Research proposes to reprint them in a single brochure.

The completion of the series coincides with Dr. Fox's retirement from the position at the Institute he has held with great distinction for many years. He joined the Institute as head of its Biochemical Section, which he was largely instrumental in founding. In more recent years he has devoted homself to the subject of nutrition. His report on scurvy in Bantu mine workers is well known, and also his valuable analyses of various South African articles of food and his field surveys on the problems of malnutrition. Dr. Fox has been a member of the Nutrition Council and the Soil Conservation Board since their inception, and he is chairman of the Dietary Standards Committee of the former. The medical profession will be glad to know that on his retirement from the Institute for Medical Research Dr. Fox has been appointed to a professional post as member of the Human Biochemistry Unit of the National Nutrition Research Institute, which was set up in October last under the Council for Scientific and Industrial Research.