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Pediatric care and the problems of nutritional deficiencies

Infants, children and adolescents constitute a majority of the population of low-income countries. Rarely, this difference to the populations of Western Europe and North America is taken into account when “tropical” diseases are described. In fact, malaria is mainly a disease of childhood, as is bilharziosis. Therefore, clinical tropical medicine needs to focus on children in prevention and disease management.

Beyond “tropical” diseases the main health problems of infants and children living in poverty are respiratory tract infections and dehydration due to diarrhoea. These mostly simple conditions are largely preventable and easily manageable if diagnosed and treated early. Main causes of the still high mortality in infancy and childhood are the gaps in primary and secondary prevention and the lack of access to health care of sufficient quality.

At this point, the issue gets political because the financial constraints of the governments of low-income countries contribute to the lack of support of public health services and thereby to the ‘maintenance’ of high infant and childhood mortality. Through their economic policies governments of industrial countries as well as the World Bank and the International Monetary Fund have contributed their share to the high infant and child death rates in low-income countries. It is to be hoped that the recent ‘poverty reduction strategies’ will have a less deleterious impact. At least the Millennium Development Goals of the United Nations point to improve child health, as they aim at:

- Reducing infant mortality

- Reducing maternal mortality
- Reducing malnutrition, and
- Controlling the spread of the AIDS-epidemic.

However, child health has also been a major field of improvements during the last three decades. The overall reduction of childhood malnutrition rates has been analysed by a team of IFPRI¹ in 2000, and major identified factors for success are maternal education, improving women's status, national food availability, and a healthy livelihood including access to health care. We can learn from this study that medical care must be coupled with the improvement of the general living conditions of people. The papers on a child survival revolution - published by the Lancet in 2003² - provide more insight into the various aspects of what doctors can do and how they can interact with "non-health workers".

In the field of curative child health care, the Child Health and Development Group in the WHO took the lead in developing a strategy aiming at improved quality of curative care, the 'Integrated Management of Childhood Illness'-program³ (IMCI). When a disease cannot be prevented one can at least aim at optimised care for the patient. Whereas in history progress in medical care was driven by medical research, here progress is driven by programmed activities. To standardize the care for the infant and child at the first contact to the health system, be it a primary care unit or a university teaching hospital, has meanwhile proven a successful strategy, from which care providers in industrial countries can learn as much as those in low-income countries and those 'in transition'.

A field where we still wait for a breakthrough in improving secondary prevention of diseases contributing to the high mortality of children in tropical countries are the immunisations against malaria and AIDS. But from tuberculosis we had to

¹ International Food Policy Research Institute, Washington, DC, USA; an institute of the multinational operating public Consultative Group of International Agricultural Reserach (CGIAR)

² The Lancet (2003) Vol. 361, iss. 9351, 9376, 9377,9378, 9379, 9380

³ Integrated Management of Childhood Illness (IMCI), WHO, Geneva, 2000

learn that even the availability of a vaccine could not prevent the reemergence of the TB-epidemic in association with poverty.

Besides the improved concepts on prevention and care for the sick child, a major step forward has been the introduction of the '10 steps-concept in the management of severe malnutrition' by the nutrition department of the WHO. The mortality of children suffering from severe malnutrition has remained high throughout the 20th century. Only a carefully designed strategy based on the present knowledge and understanding of the pathophysiology of the condition can overcome the high death toll of kwashiorkor⁴.

Nutritional deficiencies are not restricted to the visible forms of hunger. Micronutrient deficiencies, especially iodine, vitamin A, and iron deficiency, constitute separate conditions of ill-health. Whereas iodine deficiency is not restricted to the third world and can well be addressed by iodine fortification of salt for the vast majority of populations, vitamin A deficiency is common in areas where people live on a monotonous diet with insufficient intake of meat, animal-derived foods, palm oil and some vegetables containing β -carotene. As vitamin A-deficiency causes blindness (xerophthalmia), supplementation of the vitamin is an absolute must. For prevention the approach is multifold, involving education for dietary diversification, fortification of oils and fats, and breeding for vitamin A-rich foods, vegetables as well as staples. The link between health, nutrition and agriculture is obvious

The sequel of iron deficiency is often underestimated: it heavily contributes to the high maternal mortality because an anemic mother cannot cope with an even minor blood loss under the delivery. The management of iron deficiency is even more complex ranging from deworming and prevention of hookworm infections, iron-rich diet including foods which facilitate enteral uptake of iron, iron supplementation and fortification (of staple foods), and agricultural breeding for iron-rich foods.

⁴ Management of severe malnutrition, WHO, Geneva, 1998

Finally, the Asian Development Bank has created the term “double burden of malnutrition” indicating that it is not malnutrition and deficiencies alone that endanger the health of populations in low-income countries. The rates of obese children, of adults with diabetes mellitus type 2, with stroke and coronary heart disease grow faster in these countries than anywhere else in the world. Prevention of the chronic non-communicable diseases is a strongly needed aspect of primary prevention through improved nutrition because the costs for the treatment of diabetes mellitus, arteriosclerosis and various cancers can neither be afforded by the populations nor by the governments of low-income countries.

These few insights into international pediatric and nutritional medicine may underline that nobody can practise medicine or provide health care without regular reorientation. Even in areas where we are sure to know everything, our clients need us to aim on achieving excellence of care. Many examples indicate recent research providing new insights into the genetic, pathophysiologic, psychologic and social background of health and disease. Therefore, the information in the course catalogue ‘medicine & health’ is a valuable support for everybody who needs to identify a suitable course programme when he or she is intending to work or is already working in the field of international medicine. A book like “medicine & health” can never be complete but it contains an enormous amount of information on the various course programmes offered worldwide. The editor has taken every possible effort to ensure as full a coverage as possible. May the book find the wide distribution and acceptance it deserves. Public and private institutions involved in cooperation for development should consider to support its distribution and provide grants to doctors from low-income countries to further qualify and refresh their knowledge.