Annotations

Eliminating neonatal tetanus—an attainable goal

Only the most venerable paediatricians in the industrialised world will ever have seen a child with neonatal tetanus, unless they did so when visiting or working in a developing country. Paediatricians in the third world have long known it as a condition, more or less common in their daily hospital practice, treatment of which is difficult and expensive, which is distressing to observe, and is lethal more often than not. The more discerning of these paediatricians also realise that, given the fatalistic attitudes to neonatal death in traditional societies and the poor access to medical care, the numbers of children with this condition seen on their wards represent only a fraction of the total incidence and mortality of neonatal tetanus occurring in the community and country which they serve.

Incidence

The real extent of this problem in the world has only been calculable in the past few years. Earlier estimates of Bytchenko, later elaborated on by calculations based on weighted risk factors,¹ have now been confirmed (and are even shown to have been somewhat cautious) by a series of surveys undertaken since 1980 with World Health Organisation (WHO) support in more than 20 countries in Africa and Asia.² The surveys are carried out by home visits and interviews by specially recruited and trained local staff. Information is sought about births during the previous defined period—usually not less than three months and not more than a year. Whenever a neonatal death is mentioned a careful history is taken using a special protocol. The doctors responsible supervise, check, and analyse the data. Mortality rates due to neonatal tetanus reported by these surveys have usually ranged from less than 5 per 1000 live births to over 20 per 1000. The surveys in India were conducted separately in urban and rural areas of 12 major states plus Delhi. Rural Uttar Pradesh showed the highest mortality rate found in the whole series (67 per 1000 live births) while most of the rest of the areas surveyed fell between 5 and 20 per 1000. Rates in Pakistan and Bangladesh have been mostly between 20 and 30 per 1000 live births and in Indonesia somewhat lower. Corresponding rates in Africa have usually been

between 7 and 18, except in Somalia where they exceed 20 per 1000.

By cautious extrapolation from countries where mortality has been measured, and taking into account other relevant circumstances, we can now arrive at an estimate (still probably conservative) that each year about three quarters of a million newborns die from tetanus. Undoubtedly neonatal tetanus has been underestimated in the past and not been recognised as the important contributor to infant mortality in developing countries that it is now seen to be. This need not surprise us, however, for much the same was true 20 or 30 years ago with measles and poliomyelitis in developing countries until workers such as Morley, in the case of measles, and Nicholas and Ofusu Amaah in that of poliomyelitis, reported the realities.

So much for the magnitude of the problem. The total mortality caused by this painful and truly dreadful condition becomes the more appalling when we realise that the means of prevention have existed for decades; are not impracticable, difficult, or expensive; and have indeed been used successfully already by many countries.

Prevention

There are, in essence, two methods of preventing neonatal tetanus. The first, which has been the principal means of virtually eliminating the disease in the industrialised world and more recently in the People's Republic of China, is by reasonably strict cleanliness at childbirth, in a sanitary environment, and in particular by hygienic cutting of umbilical cord and hygienic care of the umbilical stump after the birth. This implies increasing the coverage of assistance at delivery by trained persons, whether in hospitals, health centres, and 'maternities'; or domiciliary delivery by qualified midwives; or—the most feasible transitional solution in many countries—by traditional birth attendants who have been trained and are supervised.

The second way of preventing neonatal tetanus is by immunisation of the future mother. The increasing coverage world wide, especially since the beginning of WHO's Expanded Programme of Immunization, of immunisation against diphtheria-pertussis-

tetanus will help in the longer term, particularly if boosters of tetanus toxoid or diphtheria-tetanus are given at school age and in puberty. More than this, however, is needed for earlier control in countries where neonatal tetanus is presently a problem. Pregnant women, or indeed women in the child bearing period of life irrespective of whether or not they are presently pregnant, who have not been previously immunised, need two doses of tetanus toxoid at least one month apart. This will ensure almost 100% protection for the next baby and its mother. In a subsequent pregnancy or about a year later a booster dose should be given. This can be relied on for another 10 years, and a final dose then would almost invariably give a lifelong immunity.

Although hygienic care at and immediately after childbirth has sufficed in industrialised countries, it has not been a rapid conquest. Even countries famed for their good maternity care had their last cases in the 1960s, and even now some European countries still have cases numbered in 10s rather than in units every year. Nor is maternal immunisation alone an adequate solution. Provision of trained assistance at delivery may be slower in eliminating neonatal tetanus, but it also confers many other benefits in reduction not only of neonatal and maternal septicaemia but of a variety of causes of neonatal and maternal morbidity and mortality. Experience in several countries, for example in Haiti and Bangladesh, shows very clearly that the *combined* approach of improved maternity care with maternal immunisation gives the quickest and best results.

Strategy

In early 1982 WHO convened an inter-regional meeting in Lahore on the Prevention of Neonatal Tetanus which reviewed new data, considered strategies of control, and made certain recommendations. These recommendations have since been adopted by WHO programme advisory committees dealing with immunisation and with maternal and child health, and most recently were strongly endorsed by the Seventh International Conference on Tetanus, which took place in Italy last year. Perhaps the most important among these recommendations was that calling for a high priority to be given to the elimination of neonatal tetanus and proposing targets such as a reduction to a level of less than 1 per 1000 live births by 1990 and to zero or to negligible proportions by the year 2000.

Two points arise about such a target. The first is that many countries still need to define more clearly

their baseline—their present neonatal tetanus mortality rates. This is feasible using the present methodology, and not expensive. There are too many gaps in this knowledge, especially in Latin America but also both in some populous countries such as Nigeria, Turkey, and Zaire, and in many smaller countries. Paediatricians in developing countries could be active in promoting the collection of this necessary baseline data.

The second is that the target really is attainable. For example, in countries both large, like China, and small, like Sri Lanka, some very sharp reductions in the neonatal tetanus death rates have occurred as a result of quite deliberate efforts. In no case has the cost been greater than that affordable by any developing country. All the countries of the world have committed themselves to a noble aspiration termed 'Health for All by the Year 2000', which is not, as some have wrongly believed, a mere pious hope and vague ideal. It entails simply the determination to strive more purposefully than before for the equitable distribution of at least the most basic primary health care for all people, regardless of where they live, and irrespective of race; colour; class, tribe, or caste; sex; or age. Among the defined and universally applicable essential elements of primary health care are a clean and safer delivery in childbirth and access to necessary immunisation. Therefore, the elimination of neonatal tetanus must be considered as a critical index of adequacy of primary health care, and it is up to all paediatricians, obstetricians, physicians, and health workers to join with their fellow citizens in ensuring that all governments turn this noble aspiration into a practical reality. To put it plainly, each child who dies of neonatal tetanus is witness, not to some inevitable act of God, but to multiple failures in the health system and in ourselves collectively, and is a reproach to us all.

References

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ROBERT COOK AND ARTUR GALAZKA
Family Health Division and Expanded
Programme of Immunisation,
World Health Organisation,
1211 Geneva 27,
Switzerland