

EDITORIAL / VAN DIE REDAKSIE

Breast cancer avoidance — is there really a strategy of hope?

A recent editorial in the *Lancet* entitled 'Breast cancer: have we lost our way?' asked: 'Surely it is time to pause and ask what we have really achieved for women with breast cancer and where we should be going'.¹

For perspective, in the historical past, certainly tumours of the breast were known, but evidently uncommon. Since 1940, the incidence rate has increased by 1% a year.² The mortality rate, however, remains steady. In the UK and the USA, there are very high incidence rates, 60 - 75/100 000 population; Norway, Britain and Australia have lower rates, 50 - 55; India 20 - 25; African countries have very low rates, 10 - 15/100 000.³⁻⁵ In the USA, the risk of developing breast cancer by 60 years is 1 in 24, by 70 years 1 in 14, and by 80 years 1 in 10.² In prosperous countries 75% of patients are over 50 years;⁶ in West Indian and African populations, the proportion is lower. In Northern Ireland, in 1986, 85% of patients had tumours at Manchester stages I or II,⁷ compared with 25 - 50% in black patients in the USA and in Africa. In the Irish study, 5-year survival ranged from 78% for those whose tumours are at stage I to 36% at stage IV.⁷ Among black patients in the USA, and those in Africa, because of advanced disease survival times are relatively short.

Why are Western women so susceptible? A recent meeting in Boston concluded that breast cancer may result from natural selection in a past way of life.⁸ Between puberty and first birth, the breast duct system grows rapidly. After first childbirth, the proliferation of duct cells slows by a factor of 20. In prehistoric women the interval between first menstruation and first childbirth was probably only 3 - 4 years. Nowadays, this interval averages 14 years, and contributes to 'an estimated hundredfold increase in the risk of breast cancer since palaeolithic times . . . From our genes' point of view, we are still stone-agers'.

In Africa, until recently, traditionally living rural populations lived frugally on relatively low-fat, high-fibre diets.⁹ Among rural black compared with white women, menstruation starts later, cycles are less regular, teenage pregnancy is common, parity high, and lactations long, with associated amenorrhoea. In this context of lesser exposure to ovular cycles, breast cancer is very uncommon. However, the scenario is changing; nowadays, menarcheal onset is earlier, families smaller, and lactations shorter. In all respects urban blacks wish to emulate whites, dietarily and non-dietarily.¹⁰ Accordingly, given time, black women in cities could attain the high rates of black women in the USA, in whom the incidence is only slightly lower than that in white women.³ Clearly, of reproductive protective factors early menarche is now unavoidable. Moreover, frequent teenage births, large families, and long lactations — these are phenomena of the past.

Turning to diet, results of numerous epidemiological, case-control and other studies^{11,12} indicated that consumption of a low-fat, high-fibre diet diminishes the risk of breast cancer. However, in the huge study of nurses in the USA,¹³ the relative risks (RR) in the highest quintile (≥ 82 g fat daily), versus the lowest quintile (< 58 g daily), ranged from 0,85 to 0,96. In the highest quintile of fibre intake (> 22 g daily) versus lowest intake (≥ 11 g daily), RRs ranged from 0,93 to 1,02. The differences are non-significant. Similarly, in a prospective study in the Netherlands, no significant association was found between total fat intake and postmenopausal breast cancer.¹⁴ Willett (quoted by Marshall¹), a very prominent worker at the Harvard University School of Public Health, has concluded, 'I fundamentally think we are

not going to be able to find any life-style factor that we are going to be able to modify easily — or even with difficulty — that will have a large impact on risk . . .'. However, workers at the American Health Foundation, including Wynder, remain hopeful over the probable effectiveness of very low fat intakes. They believe that a sustained reduced energy intake from fat of 15% (33 g fat daily) or even 10% (22 g fat daily) is possible.¹⁵ Trials of adherence are now proceeding.

What exactly does fat reduction imply in terms of diet? In South Africa, for white women, a huge fall in fat intake could be accomplished by consuming unchanged quantities of milk, butter and cheese, but using skim milk and cottage cheese (totalling 8 g fat), halving fat intake from soft margarine (10 g), and halving intake of fat from meat, meat products, cakes and confectionery (20 g), yielding a total daily intake of 38 g instead of 100 g and supplying 17% energy.

However, for the primary prevention of breast cancer, a low fat intake must begin at an early age. At the meeting of the US President's Commission on Breast Cancer,¹⁶ Welsh reported on rodents: 'Energy (calorie) restriction of as little as 10% substantially lowered tumour incidence, and energy restriction had a steeper and better dose response relation with mammary tumours than did restriction of dietary fat.' Hunter and Trichopoulos¹⁶ urged study of the effects of fat and energy intake in childhood and adolescence. However, meaningful dietary restriction among the young would seem near impossible.

Effective screening by mammography of post-menopausal women can reduce mortality from breast cancer considerably, by 27%.¹⁷ Treatment of patients using an anti-oestrogenic drug, tamoxifen, has been shown to induce tumour regression in about 60% of oestrogen receptor-positive and 10% of oestrogen receptor-negative breast cancers.¹⁸ According to the *Lancet* editorial,¹ 'So far, the best hope we have for primary prevention of breast cancer lies with the UKCCCR trial, of tamoxifen among high-risk women'.

As to basic research, the need for investigations into the genetic markers for breast cancer, and into the molecular changes that lead to uncontrolled cell growth, has been stressed by Love.¹⁹

Shakespeare, in *Hamlet*, wrote 'Diseases desperate grown by desperate appliances are relieved, or not at all.' In brief, for those at high risk familiarly (mother or sister affected), or reproductively, adoption of a very low fat diet, certainly an heroic measure, would seem advisable; for even a weak association in epidemiological terms can be of major importance in public health terms.²⁰ Effective screening after the menopause is mandatory. Moreover, despite controversy and misgivings,²¹ high hopes are being pinned on the results of the tamoxifen trials.²²

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Death from pneumonia in young children — time for action

Acute respiratory infections (ARIs) are a leading cause of death in South African children.¹ Most of these deaths are from pneumonia and are potentially preventable, but the necessary steps to address the problem have not been taken. In this South Africa lags behind much of the industrialised world and several African countries.

In a recent study, based on national mortality data provided by the Central Statistical Services, pneumonia ranked second only to gastro-enteritis as a killer of South African children younger than 4 years of age.¹ Risk factors for death from pneumonia are malnutrition, crowding, low birth weight and indoor pollution from domestic fuel combustion and tobacco smoke.² The lack of a good primary health care system, inaccessibility of hospital facilities to many rural communities, poor immunisation coverage, and lack of maternal health education also contribute. In South Africa, where race is a determinant of socio-economic status, black children are at highest risk and have a death rate from pneumonia 270 times greater than that recorded for similarly aged children in Western Europe.¹ Even for children from the economically advantaged white group the risk of dying from pneumonia was found to be 7 times greater than that of their Western European counterparts.¹

While one might quibble about the precision of these data,¹ they are the best available. Even if they are in error by as much as 100%, which is very unlikely, these figures would still be a devastating indictment of our health system and of our neglect of children.

ARIs are the single most important cause of childhood morbidity in South Africa and are a major drain on ambulatory and inpatient health resources. ARIs account for approximately 40% of childhood consultations in both the private and public health sectors.³ In addition, it is estimated that about 13 000 South African children require hospitalisation for pneumonia each year.¹ In up to half of these symptoms may recur and radiographic abnormalities may persist.⁴ Many will have permanently impaired lung function and be at risk for chronic obstructive lung disease in adulthood.⁵ Effective treatment of childhood pneumonia may thus also decrease debilitating lung disease among adults.⁶

Our predicament is not unique. On a global scale ARI represents a public health problem of greater mag-

nitude than either adult heart disease or cancer.⁷ The World Health Organisation estimates that between 25% and 33% of all childhood deaths are attributable to ARIs — 4 million preventable childhood deaths from pneumonia every year. What distinguishes the ARI problem in South Africa from that of our neighbours is our response to it: Zimbabwe (1987), Botswana (1989), Lesotho (1990), and Namibia (1990) have joined 38 other countries in the developing world in launching national programmes to implement WHO guidelines for the control of ARI, while we have not.

The WHO guidelines for reducing the morbidity and mortality from ARI⁸⁻¹¹ have three components: preventive measures which include immunisation, health education, and case management. The first step in case management is the assessment of severity. Simple clinical criteria are used. Children with a respiratory rate of less than 40 breaths per minute (50 if younger than 1 year) are categorised as mild ARI. A respiratory rate of more than 40 per minute indicates moderate ARI. Children with severe ARI have tachypnoea, lower chest wall retractions and are unable to take feeds. The guidelines recognise that in pneumonia the critical determinants of outcome are antibiotic choice and the availability of oxygen. Children with mild ARI require only symptomatic treatment, those with moderate ARI also require antibiotics, and children with severe ARI require hospital admission for parenteral antibiotics and oxygen therapy.⁹⁻¹¹

The choice of antibiotic is straightforward. The only organisms of clinical importance in community-acquired pneumonias in children are *Streptococcus pneumoniae*, *Haemophilus influenzae* and, in children who had previously received antibiotics, *Staphylococcus aureus*.¹² These bacteria can be treated by cheap, widely available antibiotics, such as amoxicillin and co-trimoxazole.

Oxygen therapy is more difficult. Hypoxia is the ultimate cause of death in pneumonia.¹³ But because of cost and problems associated with the supply of oxygen cylinders, routine oxygen therapy for children with pneumonia remains a hypothetical intervention for children in this country who live at a distance from a main centre. Oxygen concentrators are a cost-effective alternative to cylinders, capable of reducing oxygen costs by 25 - 75%.¹⁴ They are now available in South Africa and

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every hospital which now relies on oxygen cylinders should have at least two concentrators for use in children.

It is also important that the available oxygen be used efficiently. Conventional delivery systems such as face masks or head boxes often are not well tolerated and are wasteful, requiring flow rates of 4 - 10 l/min. Oxygen tents are not only wasteful but extremely unreliable and should no longer be used for children.¹⁵ Most children with pneumonia can be adequately oxygenated with a flow rate of only 0,5 - 1,0 l/min if delivered by a 6-8FG catheter in the nose. Effective oxygen concentrations of 33 - 50% are achievable by this route¹³ and humidification is not necessary. Specific guidelines for the use of oxygen concentrators and nasal oxygen therapy are currently under development by WHO and are expected to be released later this year.

Although they are simple, the WHO guidelines for the control of ARI are not a compromise. They are a distillation of the best current clinical knowledge and practice and are suitable for use in all children and by all practitioners, whether they be community-based health workers,¹⁶ family practitioners or specialists. They should be applied to all South African children as a matter of urgency. Elsewhere, they have been strikingly effective at reducing mortality from ARI. A meta-analysis of their implementation in developing countries found a 35% reduction in pneumonia mortality in infants below 1 year of age, and a 45% reduction in children between 1 and 4 years of age.¹⁷ The consequent reduction in overall childhood mortality rate was 20 - 35%.¹⁷ This effect compares favourably with the 20% reduction in childhood mortality by measles immunisation¹⁸ and an 11 - 14% reduction in childhood mortality by oral rehydration for childhood diarrhoea.¹⁹ We estimate on the basis of these results that a national ARI programme could save the lives of 1 800 or more South African children each year.

The introduction of a case management protocol for ARI in South Africa holds tremendous potential advantages and cost savings. It will improve the health of children, rationalise the use of antimicrobials, preserve antibiotic efficacy, lead to cost-effective use of oxygen and reduce expenditure on ineffective therapies. We call on the Department of Health to appoint a task force charged with the responsibility for implementing a coherent ARI programme in South Africa.

The tools for reducing the appalling death rate and morbidity from pneumonia in our country's children are available. They need to be used.

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Perspectives on AIDS control in Zambia

The first cases of AIDS in Zambia probably occurred in the early 1980s.¹⁻³ Initially an urban problem, AIDS has spread to rural areas of Zambia⁴ as in other African countries.⁵ Given its impact on the incidence and severity of endemic diseases such as tuberculosis,^{6,7} malaria,⁸ and Kaposi's sarcoma,^{1,9,10} HIV infection has become a leading public health problem. Reduced morbidity and mortality rates before the AIDS era are likely to be negated by secondary epidemics of communicable diseases like tuberculosis.^{6,7} HIV infection in Zambia is mainly spread heterosexually and has epidemiological similarities to and may be facilitated by conventional sexually transmitted diseases (STDs).¹¹⁻¹³ If STD trends are used as proxy indicators of trends in HIV infection, the country-wide rise in the

incidence of STDs in the mid-1980s¹⁴ implies that the number of cases of AIDS may continue to rise for some time even though subsequent transmission of HIV may have declined since 1987.¹⁵

The launching of the National AIDS Prevention and Control Programme (NAPCP) in 1986, the immediate task of which was to publicise the AIDS epidemic, generated widespread public awareness.¹⁶ Subsequent diversification of its activities has created a framework for assertive AIDS control. The Zambian NAPCP has performed its initial tasks well. However, even though increasing public awareness, surveillance and clinical support are very important the ultimate challenge is to deal effectively with the root causes of sexual behaviour which increase the risk of transmitting or acquiring HIV.

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But in order to achieve this, support for AIDS control from other sectors with synergistic impact on behavioural change is required. The epidemiology of HIV infection/AIDS^{2,11,12} and its expected impact on Zambia's demography and socio-economic situation surely make AIDS a multisectoral challenge. What factors, then, should be taken into account when the nature and scope of intersectoral participation in AIDS control in Zambia are considered?

Firstly, the very rapid and high post-independence urbanisation (which has made Zambia the most urbanised black African country) coupled with poor urban living conditions and a myriad problems arising from these predicaments¹⁷ represent a serious obstacle to Zambia's fight against the spread of HIV. Population movement and social strife promote the spread of HIV and ensuing secondary epidemics of communicable diseases in areas where the prevalence of HIV is already quite high.^{2,6,7,11,12}

Secondly, the high level of unemployment which reaches 65% among economically active women¹⁷ may in the absence of any form of state support for the unemployed, be expected to influence sexual behaviour. In Ghana lack of financial support was found to be the main factor driving young women into prostitution.¹⁸ Prohibition of prostitution, as is the case in Zambia, does not necessarily mean that it will not exist. On the contrary, the absence of a readily and clearly defined prostitute population in a culture where women expect some form of support in a sexual relationship may, in fact, obscure the concept of prostitution. Hence those engaged in sexual behaviour consistent with prostitution may not perceive themselves or be regarded as prostitutes. Consequently, promotion and targeting of safer sex interventions among 'prostitutes' may be difficult.

Thirdly, AIDS takes its heaviest toll on the economically active subset of the population, which means that there is a need for measures that will sustain the economic productivity of those infected by HIV in addition to efforts aimed at preventing further spread. HIV-positive urban workers need to be protected from the secondary epidemics of communicable diseases to which overcrowding and poor housing and sanitation predispose them. Hence strengthening of control programmes for infectious diseases such as tuberculosis, malaria and STDs, and prompt treatment of opportunistic infections, are important components of strategies for dealing with the multisectoral impact of AIDS.

The cultural bases for sexual relations²⁰ and situations which underlie high-risk sexual behaviour²¹ in Africa have recently been expounded. These need to be examined in the Zambian context. Any expectation that scare messages in the form of posters and advertisements in the popular press will generate the behavioural change required to contain the AIDS epidemic seems naïve; these only provide information without the required motivation and, in our experience and that of others,^{18,21} people are often aware of risks associated with certain sexual behaviour but may be lured into taking risks by economic or other compelling circumstances.

Prevention and control programmes are vital but AIDS control in Zambia and other African countries

with similar problems is unlikely to be achieved by these alone no matter how concerted. Indeed, because factors favouring the spread of HIV interact with problems of socio-economic development, inputs into AIDS control from other sectors whose activities influence sexual behaviour are required. Because the impact of AIDS is multisectoral, many sectors stand to benefit directly from their investment in AIDS control. In perspective, the AIDS epidemic is a challenge not only to health status and economic development, but also to a country's resolve to mount a multisectoral response to the cultural, demographic and socio-economic impediments to effective prevention and control.

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