surgically defined response, even if transient, is an indicator of effective palliative therapy, since tumour is being controlled, at least transiently. This ignores the substantial toxicity of aggressive therapy and the not negligible toxicity of i.p. drug administration and multiple laparotomies. If a woman with symptomatic metastatic ovarian cancer has been rendered free of symptoms and fully functional, administration of toxic therapy and major surgical interventions at the point of an excellent response will produce immediate symptoms, and thus greatly impair the quality of her life. This is done in the undocumented hope of some future gain. Current data indicate that it is precisely those few patients who do well after i.p. therapy who are also most likely to respond to retreatment at relapse with systemic chemotherapy based on cisplatin [3–6].

It is thus inappropriate to term salvage i.p. therapy "effective palliation" when asymptomatic patients are treated and there is no definitive study showing enhanced quality or duration of life compared to policies of watchful waiting for relapse or alternative systemic therapy employed when markers are available to follow the patient for response.

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Childhood Cancer: Trends in Incidence, Survival and Mortality

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IN THE past 30 years there have been dramatic improvements in survival rates for childhood cancers—at least in developed countries. This is due to the introduction of new treatments and to the extent to which children with cancer are now treated, or have their treatment planned, at specialist centres. There is now a widespread use of improved methods of treatment and the results are clear both from analyses of population-based survival

rates [1, 2] based on national cancer registration statistics, and from trends in mortality [3]. There appears to be no evidence from cancer registration data, where this is available, that the observed decrease in mortality could be attributable to a decrease in incidence, i.e. in the number of cases occurring.

In the absence of cancer registration data on which to base calculations of incidence or population survival rates, it will be necessary to try to use mortality rates to monitor treatment progress. Can we draw any conclusions about what is happening to survival rates in countries, particularly developing countries, where only mortality data are available? Levi and his colleagues [4] tackle this problem in their paper in this issue (pages 771–782).

In essence, their argument is that in countries where there are no, or only limited, decreases in mortality, the improvements in the delivery of treatment, known to have taken place in at least some developed countries, have not occurred. Levi and associates identify two problems with this argument. There are, inevitably, problems with the reliability of the diagnoses on death certificates, particularly for some developing countries and for earlier periods (which will be particularly important in analysing trends); and there will be fluctuations in rates simply because of random variation when the rates are based on small numbers. There is also the difficulty that trends in mortality may reflect, or be obscured by, trends in incidence. How likely is it that any of these possibilities will lead us to misinterpret trends in mortality?

First, diagnostic misclassification can only be dealt with by improving facilities for making correct diagnoses (although, paradoxically, this process itself may initially suggest the occurrence of a trend where none exists). Changes in rates due to improvements in diagnosis, or simply to changes in diagnostic habits, can sometimes be recognised as such by complementary changes in the rates for other causes of death, but this is unlikely to be the case if the shift is to or from numerically more important causes.

Second, the difficulty that changes in mortality rates may be the result of random fluctuations can, to some extent, be overcome by examining trends over several years and looking separately at different diagnostic groups, taking into account known therapeutic advances relevant to each such group. The possibility that any fluctuations are simply due to chance can of course be dealt with by formal statistical analysis—but the conclusion of such an analysis will normally only be that an observed change could, or could not, reasonably be attributed to chance, but leaving open the possibility of other explanations.

Third, the possibility that trends in mortality may be the result of, or may be obscured by, underlying trends in incidence rates, must be considered, but such evidence as there is would suggest that this is unlikely. The rather sparse information available on the causes of childhood cancer gives little reason to suppose that there is an aetiological factor, the removal of which would lead to a decrease in incidence comparable in magnitude to the decreases in mortality attributable to improvements in treatment. Thus, any decrease in mortality provides strong *prima facie* evidence for an improvement in survival rates. Equally, it is unlikely that such a decrease would be obscured by a simultaneous increase in the true incidence. Draper and associates [5] found limited evidence, and only for certain diagnostic groups, of such increases.

Thus we may reasonably conclude that, since it is unlikely that cancer registration data will become universally available, analyses of mortality data will continue to provide a useful tool for monitoring the introduction of new methods of treatment for childhood cancer and for encouraging the adoption of improvements. Obviously, in many countries, there are financial barriers to the use of expensive treatments however effective and, particularly in developing countries, there are likely to be competing public health needs where greater benefits can be achieved for the same expenditure of scarce resources.

A specific instance where monitoring of childhood cancer mortality may be of particular value is neuroblastoma, although, as Levi and associates point out, analyses of mortality based on ICD site coding are particularly difficult with this tumour because of the variety of sites to which deaths may be allocated. The importance of monitoring mortality from neuroblastoma is that decisions may need to be made about screening programmes; the justification for these is diminished if mortality decreases sufficiently as a result of treatment advances. Such decisions should, of course, in any case, await the results of the studies of the effects of screening currently in progress.

We may conclude, albeit with several caveats, that it is potentially valuable to continue monitoring childhood cancer mortality in order to assess the impact of modern treatment methods. Contrariwise, the substantial improvements in survival rates that are ocurring mean that mortality data are of very limited value for monitoring the impact of postulated aetiological factors.

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