Cancer survival in the developing world

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Published Online
December 10, 2009
DOI:10.1016/S1470-2045(09)70371-7

See Articles page 165

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More than half of patients diagnosed with cancer each year live in developing countries—a fact that may come as a surprise but has been true since around 1990. Still, the developed world continues to struggle with the growing cancer burden in ageing populations—trying to improve early diagnosis, extend screening, provide equitable access to optimum treatment, improve survival, and reduce mortality. These are not trivial problems, even for wealthy countries with well-developed infrastructure and spending of 6–16% of gross domestic product on health care, but the continuous drumbeat of research and discussion about cancer control in developed countries can all too easily drown out voices from elsewhere.

Developing countries are still coping with a huge burden of communicable disease, poor infrastructure, and very limited health budgets, and now the three engines of escalating cancer burden are also on the move: rapid population growth, ageing populations, and an increase in cancer risk at each age. The looming cancer epidemic in these countries is the elephant in the room; although not much is being discussed it is far too large to ignore.

In this issue, Sankaranarayanan and colleagues[1] offer important new insights into cancer survival patterns in developing countries. They provide population survival estimates based on 340 000 patients, under age 75 years, who were diagnosed with one of 10 cancers during 1990–2001. Data are from 25 cancer registries in 12 countries, mainly low-income or middle-income countries in Asia, sub-Saharan Africa, and Central America. 5-year survival ranged from 90% for localised breast cancer in the better-resourced territories of Hong Kong (China), Singapore, and Izmir (Turkey)—comparable with survival in many developed countries—to less than 10% for large-bowel cancer in The Gambia and Kyadondo (Uganda). The patterns of survival by stage also provide striking evidence of the need for earlier diagnosis and effective treatment.

Many concerns about comparability of the results were addressed by standard quality-control procedures applied to all data sets, and centralised analysis of relative survival using local or national life tables to control for differences in background mortality. Completeness of registration and follow-up was generally high, but despite the authors' best efforts, losses to follow-up will have led to some inflation of survival. Inclusion of some of the less-complete data sets is justified by the extreme paucity of survival data in some regions of the world: "in this situation, even incomplete data have value".[2] The inclusion of children (0–14 years) is surprising; for most cancers in this study, the risk in children is low. Survival comparisons between the 12 countries in the study were facilitated by age-standardisation, but the choice of unspecified age weights (standard weights were available[3,4]) will prevent comparison with findings from other studies. Despite these concerns, the study provides an invaluable insight into the effectiveness of cancer health care in the developing world. The picture gives cause for concern.

Prevention is always preferable to cure, especially for a chronic, progressive, and lethal disease for which effective treatment can be complex and expensive. But even the universal application of every preventive strategy we know will not prevent the millions of cases of cancer diagnosed worldwide, each year for the foreseeable future. The long-term global strategy must therefore be twin-track: to prevent cancer where possible while ensuring universal access to effective treatment for those who develop the disease.

A key message for oncologists and health planners must be that cancer survival in many developing countries is abysmally low. Substantial investment in wide public access to effective health services for early diagnosis, screening, and treatment is crucial. This is a huge challenge for global public health, given the rapid growth in cancer burden in developing countries. The World Cancer Declaration, launched by WHO Director-General Dr Margaret Chan at the UICC World Cancer Congress in Geneva in 2008, sets out 11 goals for 2020, including: "There will be major improvements in cancer survival rates in all countries." Achieving that goal will require investment in health-care systems, but also in evaluating their effectiveness. Progress toward the world cancer goals for 2020 is to be monitored every 2 years. Robust survival data are required to compare the effectiveness of health systems within and between countries, but efforts at global monitoring of cancer survival are still in their infancy.[5] A more systematic approach is urgently required.

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The author declared no conflicts of interest

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Patient access schemes for high-cost cancer medicines

Innovative new anticancer medicines are often associated with a premium price with little variation in global prices. For the UK, this can mean new cancer medicines are not adopted, because they are judged to be too expensive and not cost effective by the National Institute for Clinical Excellence (NICE). In response, pharmaceutical companies have developed patient access schemes (PAS), or risk-share schemes, that allow drugs companies to offer discounts or rebates to reduce the cost of a drug to the UK National Health Service (NHS). These schemes are seen as a way of improving access to new medicines for NHS patients.[1]

Drug pricing is a complex issue and is controlled in the UK by the Pharmaceutical Price Regulation Scheme (PPRS).[2] The 2009 PPRS recognises that PAS have some value in improving the cost-effectiveness of new drugs to enable NICE approval, but states that there is a need to "ensure that the cumulative burden on the NHS is manageable". In the NHS, cancer medicines are supplied to patients in hospital provider trusts, who are then reimbursed for the cost of the medicine from the patient's local primary care trust (PCT). The first scheme endorsed by NICE for a high-cost anticancer medicine was the Velcade response scheme (VRS), which was incorporated into the appraisal of bortezomib for the treatment of multiple myeloma.[3] Patients who respond to bortezomib after four cycles (12 weeks) continue the treatment and are funded by the NHS, whereas patients who do not respond are taken off the drug and the cost (about £12 000) is refunded by the manufacturer.

Published evidence on the effect of PAS is scarce; there are some reports on monitoring of early schemes,[4] but most recent publications are discussion pieces in the pharmacy press.[5,6] Concern regarding the benefit of PAS was raised by the UK government's House of Commons Select Committee on Health, who "had serious concerns about the effectiveness of risk-sharing schemes where they place the burden of proving the success of the scheme on the NHS and not on pharmaceutical

***Panel:* Summary of key findings**

- In 47% of cases, refunds received by hospital provider trusts for two of the most common PAS (sunitinib and bortezomib) were not being passed on to the PCT, meaning that the purchasers were paying full price for the drug(s). There is a risk that the purchasing PCT will not accept PAS if they are not receiving the refund.
- There is a need for flexibility around time limits for processing claims. Ideally, at least 90 days should be allowed to process claims and reduce the financial risk.
- 73% of respondents reported they did not have capacity to manage PAS without funding staff to manage, coordinate, and track the schemes. This could prove a barrier to implementation of future schemes and the efficient management of current schemes.
- There was no consensus over which of the schemes was best or worse, although the two schemes linked to measurement of a clinical response, cetuximab and bortezomib, showed a trend towards being the worst. Response-based schemes pose challenges for tracking patients and ensuring claims are made to refund non-responders.
- The erlotinib scheme was the simplest to administer, needing an average of 17·5 min of staff time per patient episode. Sunitinib needed 19 min, bortezomib 37·5 min, and cetuximab 45 min.
- Minimum effect on capacity and minimum requirement for registering patients were considered the most important factors for a good scheme.
- Many schemes depend on successful communication between the doctors managing the patient and the pharmacists managing the scheme. This was highlighted as a problem with the bortezomib scheme, where every missed claim due to inadequate communication would result in a loss of £12 000.
- There seems to be much frustration with PAS and a desire to see improvements to the way the NHS supports the implementation of these schemes. The formation by NICE of a dedicated body, the Patient Access Scheme Liaison Unit, to coordinate these schemes is seen as a positive step.
- 73% of respondents thought a set of nationally approved standard templates for PAS, to allow manufacturers to select a familiar off-the-shelf scheme, would be beneficial.