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Editorial

The Silent Revolution in Childhood Cancer

T C Quah

Much has been trumpeted about the improved survival in childhood cancer over the past 30 years, mainly due to advances in chemotherapy. All this is true. A good example is acute lymphoblastic leukemia (ALL), the commonest childhood cancer. The chances of long-term survival have risen from almost no survival in the pre-chemotherapy era, to about 50% in the early 1970s, and at least 65%[1] in recent studies. An even more remarkable improvement has similarly been reported in childhood acute myeloid leukemia (AML). When we reviewed our results for AML in children treated in our department from 1973 – 1982, the survival rate was 15%[2], which was the average experience for most other centres at that time. However, reports of recent trials showed an improved survival rate of 30% – 40%[1].

The 1950s was the era during which many cytotoxic drugs were discovered. Since then the pace of discovery has slowed down tremendously. We are still using many of the drugs first discovered more than 40 years ago, with only a few additions to the armamentarium. Thus, much of the recent improvement in therapy is, rather, due to new ways of using old drugs (eg high-dose cyclophosphamide, methotrexate, cytosine arabinoside). We can use high-dose therapy fairly safely now because supportive care has improved. What used to be "lethal" doses are now used as a routine. Myelosuppression is alleviated with haemopoietic growth factors, and infections and bleeding are vigorously treated with potent antimicrobials and blood support.

The above is quite well-known to most physicians. However, I want to emphasize two less well-known advances. These may not be as dramatic and headline-grabbing, but they have struck me, personally, as equally important. I label these as "the silent revolution in childhood cancer". They have made great impact on the lives of children with cancer and deserve to be better known.

More is not always better

The first advance is the increasing finesse in identification of risk factors for various childhood malignancies. This has enabled us to target therapy more effectively, with intensive therapy being reserved for patients with poor prognostic factors, while delivering relatively mild therapy for the good-risk patients.

As childhood cancer is relatively rare, it is not often that single centres can accumulate enough experience to form valid conclusions. One of the most important advances in the practice of paediatric oncology comes from the big multi-institutional cooperative groups, especially the Childhood Cancer Group (CCG) and the Paediatric Oncology Group (POG) in the US, and the Society for Paediatric Oncology (SIOP) in Europe. It is through the cumulative experience of these groups that we are now able to define risk groups much better, and to employ different strategies in different groups.

One of the most striking instance of this targeted therapy is in Wilms' tumor. Most patients with Wilms tumor in the United States are enrolled in the National Wilms Tumor Group, which has thus accumulated a great deal of experience, enabling us to refine prognostic groups and so target therapeutic strategies with much greater finesse than before. For example, data from the previous four NWTS (National Wilms' Tumor Study) trials have shown an excellent prognosis for a subset of very good-risk patients (taking into account the age of the child, the stage, histology and weight of

the tumor). Its most recent study (NWTS-5)[3] thus advocates no chemotherapy for these patients, enabling paediatric oncologists to avoid unnecessary toxicity in these children.

Similarly, for acute lymphoblastic leukemia (ALL), the risk factors are continually being refined. We realise now that for good-risk ALL, excellent results can be achieved with relatively mild chemotherapy associated with a low risk of toxicity.

To relieve often, to comfort always

The second advance is our increasing ability to minimise the trauma of childhood cancer and its therapy.

Therapy for malignancies has always been extremely unpleasant for adults. It is of course, even more so for children. When I started out in paediatric oncology more than 15 years ago, I often felt frustrated as I was unable, due to the lack of time, to help the children and their families cope with their illnesses. It was very distressing to see the children suffering from nausea, vomiting and pain, and the families suffering along with the children with no one to turn to for help. However, over the past decade, the situation has improved tremendously.

I would like to mention a few advances which have contributed to make the treatment process more bearable for the children. Firstly, the 5-HT3 receptor antagonists (the "setrons") have made a tremendous impact in relieving nausea and vomiting, without causing undue sedation or other side effects. Secondly, the use of indwelling intravenous access devices ("ports" and Hickman's catheters) and the local anaesthetic team has made intravenous access much easier and less painful for the children. Thirdly, in selected cases, the use of haemopoietic growth factors has decreased the incidence of therapy-related infections.

The fourth area is in psychosocial support. Over the past few years, the Children's Cancer Foundation in Singapore has been instrumental in providing psychological support for the patients and families, in the form of counselling, patient education and play therapy. Many of our little patients have lost their "hospital-phobia" and some in fact look forward to visit the hospital.

We still may not be able to "cure" all of our patients of their cancers, but we are constantly reminded that we can "relieve often and comfort always".

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