BRITISH MEDICAL JOURNAL

LONDON, SATURDAY 26 FEBRUARY 1983

Emotional distress during cancer chemotherapy

All cancer treatments are destructive—the cutting and mutilation of surgery, the burning of radiation, and the poisoning of chemotherapy—but cancer is a remorseless disease and "Diseases desperate grown by desperate appliance are relieved, or not at all."[1]

Modern cancer chemotherapy is the product of chemical warfare and animal studies. Many of the victims of "mustard gas" poisoning in the first world war were found—unexpectedly—to have aplasia of the bone marrow at necropsy.[2] Years later research on mice developed this chance finding into a treatment for malignant lymphomas and leukaemias using drugs related to mustard gas.[3] The drugs used in such treatments were cell poisons, and they were aptly named cytotoxic. Today there are 30 or more different anticancer drugs available, some more specific than others, and their use is now described as cancer chemotherapy; nevertheless, the agents used are still cell poisons.

Inevitably cancer chemotherapy will cause emotional distress. Patients are mostly aware that if such treatment is recommended their condition is serious if not desperate, and many will become severely depressed. They are not deceived by the blandness of the word chemotherapy. They know that the drugs used are potent and dangerous and the bush telegraph alerts them to many of the possible side effects and complications. They will know of patients who have had drug treatment for many months, with all its miseries, and who have died without receiving any benefit. Less well known to the public are the successes of chemotherapy—the cures of leukaemias, lymphomas, Hodgkin's disease, testicular and some ovarian cancers, and cancers in children; long remissions in other malignancies; and increased periods free of active disease and consequent improvement in quality of life.

Among the factors that may contribute to patients' emotional distress the most important seems to be coming to terms with the reality that their disease is severe and possibly fatal. Lack of information on the aims of the treatment and the possible outcomes adds to patients' concerns and fears. A further important factor is the physical effects of the treatment: nausea, vomiting, diarrhoea, general debility, and alopecia; loss of taste, appetite, and sexual function all contribute to feelings of helplessness and lack of control. The relentless progression of courses of treatment can undermine the most determined. Knowing in advance that once again a period of sickness and ill health must be endured may produce "conditioned vomiting," needle phobia, and even refusal of treatment. Often there are no indicators or markers to monitor the response to treatment,[4] making perseverance a matter of faith, and at the end of a long schedule a patient may feel abandoned and concerned that nothing more seems to be being done.[5]

The physician who prescribes chemotherapy and who is responsible for the total care of the patient needs a good understanding of the full impact of the treatment. He or she must realise how the patient sees the treatment and must know in detail the effects of each drug used alone and in combination, so that full explanation and warnings may be given of the likely problems and side effects. Each individual patient's ability to accept and cope with a long and demanding course of treatment must be accurately assessed so that possible modifications may be made.

Emotional distress during chemotherapy is often the result of a failure of communication between the doctor and the patient. Chemotherapy may be prescribed with no full explanation of what will happen, no discussion of the aims and possible outcomes of the treatment, and no discussion of the likely side effects of the drugs. Patients may be quite unprepared for the severity and variety of the side effects and for the courage required to accept, endure, and complete the course.

If a malignant tumour can be cured by chemotherapy, the patient (and often the relatives) should be fully informed of the aims of the treatment, the chances of success, and the details of the proposed course. Any fears and anxieties should be discussed, and frequent reviews are needed during and after the treatment to reassess, reassure, and encourage. Different patients will want to know and understand different amounts, and it may often be necessary to give repeated explanations to be sure that the patient has as much information as he or she wants.

If treatment is to be given with the hope of procuring a long remission or relief of distressing symptoms a similar approach should be adopted and the chances of benefit honestly evaluated and discussed. Some well informed patients may decide against chemotherapy, considering that the demands of the treatment outweigh any possible relief which may or may not be achieved. Others will be glad to accept any offer of treatment, and will be prepared to cope with all the disadvantages in the hope of a successful outcome, and they will have a goal to work towards, however small.

If this type of open approach is adopted, and if the patient and relatives and the team of nursing staff and doctors can be fully informed at all times of what is at stake and of what is expected of the treatment, most of the emotional problems can be contained.

Plainly the patient will have to come to terms with the illness, and this may need the well timed help of a counsellor, who may be a doctor, nurse, social worker, or psychiatrist, or even a close friend or relative. Regular support during the treatment will help to minimise the distress caused by the side effects of the drugs. Antiemetics can usually control sickness, supplying an attractive wig in advance of alopecia helps, and use of a "cold cap" may even prevent loss of hair. Sensible use of hypnotics can ensure a good night's sleep. Explanation that the problems are expected and that things are not going wrong may often relieve anxiety without the need for tranquillisers, but sometimes help is needed with severe depression.

Patients seem to cope with chemotherapy in the same way that they respond to other life events. Some take it in their stride, others manage with difficulty, and some not at all. Charting reactions and miseries seems an insensitive procedure and unlikely to improve the patient's lot, but indices of performance status are of value as they are a constant reminder that a whole person is being treated and not just a disease or a blood count.[6] The Karnofsky index, although 20 years old, has stood the test of time and is often more useful than more elaborate scores.

The emotional distress caused by cancer chemotherapy must not be underestimated, but it is not difficult to understand. What is difficult is finding teams of experienced staff who can organise and supervise the treatments so that they can be completed without too much anxiety and distress and without patients "dropping out." Such teams need also to be prepared to evaluate new drugs and drug combinations for effectiveness and for toxicity. The skill required indicates that such treatment should be undertaken only in specialised units. Intensive cancer chemotherapy is not suitable for occasional use by the inexperienced.[7]

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Precocious puberty and its management

Puberty is probably one of the most turbulent ages of man, heralding the onset of change from childhood into adult life and the acquisition of reproductive ability. The process starts at a variable age and lasts three to four years. The physical signs of puberty and the chronology of these events have been well documented by Tanner.[1]

In girls the earliest sign is enlargement of the breast bud, occurring on average at the age of 11 with a range from 9 to 13 years. The first sign of puberty in boys is an increase in testicular size, which can be assessed volumetrically using an orchidometer.[2] Since this event is not outwardly obvious, girls are widely believed to develop earlier than boys. In fact, testicular enlargement starts on average at the age of $11\frac{1}{2}$ (range 10 to 14). The pubertal growth spurt does, however, occur about two years earlier in girls than in boys. Menarche is a late event in puberty: the mean age is 13, but the range is from 11 to 15.

The timing of these events in normal puberty needs to be taken into account in defining precocious or early puberty. In general, development of the breast before 8 years or enlargement of the testes before 9 years, followed in each case by the progressive onset of other signs associated with normal puberty, is regarded as true central precocious puberty. The terminology used implies that the onset of puberty is due to premature activation of the hypothalamic-pituitary-gonadal axis.[3] In contrast, puberty is termed pseudoprecocious or false when the source of increased sex steroid secretion is independent of this axis, as in autonomous adrenal and gonadal tumours. The distinction is important when considering appropriate investigations. For example, a boy with early penile and pubic hair growth but small testes has a peripheral source of excess androgens such as congenital adrenal hyperplasia or an adrenal tumour. The signs of puberty in true central precocious puberty are usually isosexual or appropriate to the individual's genotype.

Precocious puberty occurs about four to five times more frequently in girls than in boys. Up to half the boys affected have an organic cause—either tumours in the region of the posterior hypothalamus, median eminence, and pineal gland or the consequences of previous hydrocephalus, infection of the central nervous system, and occasionally trauma to the head. Most girls with precocious puberty have no identifiable cause, though sometimes computed tomographic scanning may show up small, probably benign, lesions in the supraseller region.[4] These are often hamartomas. In the McCune-Albright syndrome precocious puberty is associated with characteristic pigmentation of the skin and radiological changes of polyostotic fibrous dysplasia. Affecting mainly girls, the sequence of pubertal events is abnormal, with vaginal bleeding often preceding breast development. A high incidence of non-specific abnormalities in the electroencephalogram has been reported in children with idiopathic precocious puberty.[5]

Clinical examination should include detailed neurological and ophthalmological assessments. A radiograph is needed of the skull, and of the hand and wrist for skeletal age, and a skeletal survey should be performed if the McCune-Albright syndrome is suspected. A computed tomographic scan should also be done. Endocrine tests include an assessment of the gonadotrophin (luteinising hormone and follicle stimulating hormone) response to stimulation by gonadotrophin releasing hormone and measurement of the plasma concentration of oestradiol or testosterone. An undetectable serum concentration of human chorionic gonadotrophin excludes a rare gonadotrophin producing tumour such as a hepatoblastoma or a teratoma.

Management is directed at treating the underlying cause, if that is appropriate, blocking the actions of gonadotrophins and sex steroids, and, above all, providing suitable counselling for emotional and behavioural problems. Neurosurgical treatment of a lesion in the central nervous system is not warranted solely on the basis of isolated signs of early puberty. In the absence of neurological signs a slow growing benign hamartoma may be observed closely with serial computed tomographic scans. Medical treatment may be given to decrease the