

Quality of Life After Treatment for Testicular Cancer—The Patient's View

N.S.A. STUART, R. GRUNDY, C.M. WOODROFFE and M.H. CULLEN

Queen Elizabeth Hospital, Edgbaston, Birmingham, U.K.

Abstract—Twenty-eight patients cured of testicular cancer by cisplatin-based chemotherapy were asked for their own views of the long-term psychological and social effects of their treatment. Their views were compared with a group of 34 testicular cancer patients cured by radiotherapy who were matched for age, social class and time since treatment. A category rating type questionnaire was used with questions concerning general health, subjective side-effects of treatment, employment, relationships, reproduction and mood. The principal differences were (1) the chemotherapy group reported a greater prevalence of physical side-effects, (2) the radiotherapy group reported greater anxiety and depression since treatment and (3) a significant number of patients in the chemotherapy group felt that their illness had had beneficial effects on their relationships with family and friends.

INTRODUCTION

THE IMMEDIATE psychological impact of being diagnosed as having cancer is well known as are the short-term physical and psychological effects of receiving chemotherapy. In view of the severity of these immediate effects, it might be expected that psychosocial morbidity would persist following treatment. The long-term effects of being diagnosed and treated for cancer have, however, received little study. Testicular malignancy is increasing in incidence and is now the commonest registered tumour at ages 24–34 [1]. As the majority of such patients can now be cured by cisplatin-based chemotherapy, there is an increasing number of young survivors of this form of cancer who are at risk of long-term psychosocial effects [2, 3].

The aim of this study was to determine the survivors' own views of the long-term effects of treatment for testicular cancer assessing both a group cured by chemotherapy and a similar group cured by radiotherapy.

METHODS

The chemotherapy group comprised all 36 patients treated with chemotherapy for testicular cancer (mainly teratoma) in the period 1979–1984 by two consultants (MHC, AJB). Patients received between three and six cycles of cisplatin, vinblastine and bleomycin with four also receiving etoposide and one also receiving actinomycin-D. A second group of 54 patients treated for testicular malignancy (largely seminoma) with orchidectomy and

radiotherapy was selected from the hospital radiotherapy register to produce a similar distribution of age, social class and time since treatment. The radiotherapy schedule comprised 3000–4000 cGy given in 20 fractions using anterior and posterior dog-leg fields. None of the study patients had evidence of residual disease. All were sent a questionnaire devised specifically for this study and relating to general health and fitness, subjective long-term side-effects of treatment, employment, relationships, reproduction and mood. Questions were of the category rating type and were designed to assess the patients' own views of the long-term effects of treatment (e.g. 'Compared with before your illness: do you think you get depressed more often/same/less often?', 'In general, compared with before your illness, is the quality of your relationships with your friends: worse/same/better?'). Questionnaires were returned anonymously. Characteristics of the two groups are shown in Table 1.

RESULTS

Tables 2 and 3 summarize the responses to the questionnaire in the two groups. The majority of patients in both groups felt that their general health was good both before their cancer was diagnosed and at the time of the study. Some reported feeling less fit since their illness, but there was no significant difference between the groups. There was some reduction in the number of smokers, more so in the chemotherapy group where a third of smokers had given up since their cancer was diagnosed. The chemotherapy group had suffered some of the recognized physical side-effects of chemotherapy, with

Table 1. Characteristics of patients in the two study groups. The groups only differ significantly in disease type and stage of disease

	Chemotherapy	Radiotherapy
Questionnaires sent	36	54
Replies received (%)	28 (78%)	34 (63%)
<i>Of responding patients</i>		
Median age at treatment (range)	29 (19-48)	33 (20-48)
Mean months since treatment (range)	32 (6-32)	29 (7-67)
Social class distribution		
I	2	2
II	6	9
III	13	18
IV	3	3
V	1	0
Not known	3	2
Disease stage		
I or IIA	12	34
IIB or C	7	0
III	2	0
IV	7	0
Tumor type		
Seminoma	2	33
Teratoma	26	1

Table 2. Patients' views of the effect of treatment on their general health and fitness, physical side-effects of treatment, fertility, and employment

	Chemotherapy (n = 28)	Radiotherapy (n = 34)	P-value (χ^2)
<i>General health and fitness</i>			
In good health before their illness	27 (96%)	32 (94%)	n.s.
In good health now	26 (93%)†	30 (88%)†	n.s.
As fit now as before their illness	22 (79%)	31 (91%)	n.s.
No reduction in capacity to take exercise	19/27 (70%)	27 (79%)	n.s.
Smoked before treatment	18 (64%)	17 (50%)	n.s.
Smoking now	12 (43%)†	15 (44%)†	n.s.
<i>Physical side-effects of treatment</i>			
Hearing difficulty before treatment	4 (14%)	4 (12%)	n.s.
Hearing difficulty since treatment	11 (39%)‡	5 (15%)†	<0.05
Skin changes	9 (32%)	6 (18%)	n.s.
Possible Raynaud's phenomenon (as assessed by the patients' written description of the symptoms)	3 (11%)	0	n.s.
<i>Fertility</i>			
Number married	20 (71%)	19 (56%)	
Number having had a vasectomy	2	8	
Wife has become pregnant since the treatment	7/18* (39%)	1/11 (9%)	
<i>Employment</i>			
In employment before treatment	25 (89%)	33 (97%)	n.s.
In employment now	21 (75%)†	31 (91%)†	n.s.
Permanent loss of job prospects because of the illness	8/26 (31%)	4/33 (12%)	n.s.
Permanent loss of earnings because of illness	3/25 (12%)	3/33 (9%)	n.s.

P-value compares chemotherapy group with radiotherapy group, n.s. = no significant difference.

*One miscarriage, six normal deliveries.

†No significant difference compared to before treatment.

‡Significantly more common than before treatment.

Table 3. Patients' views of changes in their relationships and mood since treatment

	Chemotherapy				Radiotherapy			
	better	same	worse	P-value	better	same	worse	P-value
Relationships								
Relationships with friends	9	18	1	0.02	4	30	0	n.s.
Relationships with family	10	18	0	0.002	9	23	2	n.s.
Relationship with wife	10	11	3	n.s.	8	20	3	n.s.
Sexual relationships	3	18	7	n.s.	5	20	8	n.s.
Mood	more	same	less		more	same	less	
Worried about their health	13	9	6	n.s.	24	4	4	0.003
Worried about the future	10	12	6	n.s.	16	12	4	0.02
Depressed	7	17	4	n.s.	12	19	1	0.004

P-value for the sign test assessing equality of 'better' and 'worse' or 'more' and 'less'. This is an exact probability from the binomial for 25 or less preferences and is the normal approximation for more than 25 preferences.

difficulty in hearing being reported significantly more often than in the radiotherapy group and occurring more often than before treatment ($\chi^2 = 4.5$, $P = 0.04$). Encouragingly, at least 39% of married patients treated with chemotherapy were fertile. Most respondents in both groups remained in full-time employment but 31% of the chemotherapy group felt that they had lost job prospects because of their illness. When asked to comment on any effects on their employment, four of this group who were in work said that a history of cancer would count against them in a competitive interview for a new job or for promotion. None of the radiotherapy group mentioned this. One unemployed chemotherapy patient said 'Every time I go for a job I tell them I have had cancer and they just say "We'll let you know"'.

A significant number of patients in the radiotherapy group reported that they felt depressed more often and had greater feelings of anxiety about their health and future since treatment. There was a similar but non-significant trend in the chemotherapy group. Conversely, a significant number in the chemotherapy group felt that their relationships with their family and friends had improved since their illness, a finding not seen in the radiotherapy group. Both groups were asked whether the experience of developing, and being treated for cancer had been in any way beneficial. Perhaps surprisingly, 77% (20) of the chemotherapy group felt that it had (radiotherapy group 82%). There was also an invitation to add further comments; these were generally similar in the two groups—'I feel I have a greater appreciation of life and living', 'My family have come closer together', 'I value my family much more than before'. Some, however, had more down-to-earth comments—'We got the house we wanted through my illness', 'It made me give up fags', and some of the comments were more negative 'My wife learnt a lot from it but I could have done without

it', 'I wouldn't wish this treatment on my worst enemy'.

DISCUSSION

The immediate psychological effects of the diagnosis and treatment of malignancy are well documented: many patients show increased anxiety and many are depressed [4–6]. The long-term effects have, however, received less study partly because many of the possible psychosocial effects of treatment are difficult or impossible to assess objectively. Even though we cannot exclude the possibility that patients may deliberately or subconsciously mask their true feelings, we have relied on the patients' own views of the long-term effects of their treatment. If a patient feels, for example, that his family life has improved as a consequence of illness this is significant even if there are no objective measures to confirm it.

In this study both groups reported some permanent change in mood. Many thought that they were depressed more frequently and that they worried more about their health and about the future since their illness. This change was, however, only significant in the radiotherapy group and not in the chemotherapy group, a difference that may reflect the greater reassurance demanded by patients receiving intensive chemotherapy compared to those receiving radiotherapy. In any case it would suggest that the chemotherapy, *per se*, does not cause any increase in long-term anxiety or depression. A significant number of patients who had received chemotherapy also reported an improvement in long-term relationships with their family and friends, a finding not seen in the radiotherapy group. The majority of patients in both groups consider that their illness and its treatment has had some beneficial effects on their lives.

Previous work on mixed populations of cancer survivors has also shown little long-term morbidity

and has suggested that there may be benefits from being diagnosed and treated for cancer. Schmale *et al.* [7] compared 104 cancer survivors, treated with various modalities, with normal controls and showed no difference in anxiety, depression or general well-being. There were, however, significantly more general health worries in the cancer group. Several studies have shown improved quality of life in cancer survivors: Danoff *et al.* [8], in a non-controlled study, found no great differences between cancer survivors treated with radiotherapy and the age-adjusted national baseline, but suggested that cancer survivors were more satisfied with 'life as a whole'. A more recent study [9], looking particularly at cancer of the testis, while confirming the short-term psychological toxicity, has shown that these effects are short-lived and that 12 months after chemotherapy the group may show greater than normal psychological well-being. Kennedy *et al.* [10] showed that cancer survivors had a greater appreciation of life and relationships and concluded that recovery from cancer was a good experience for character development.

The trend towards a greater risk of unemployment and loss of job prospects after treatment in the chemotherapy group is worrying, and implies that there is still a need for education amongst employers [11]. A number of patients had suffered physical side-effects from chemotherapy, particularly hearing loss, skin changes and Raynaud's phenomenon; one patient was known to be severely disabled by bleomycin-induced pulmonary fibrosis. The majority of the group, however, appeared to have no long-term subjective side-effects from their

illness and claimed to feel as well as before their illness.

The cause of any differences between the two groups cannot be defined by this study and clearly factors other than treatment type may be involved. For example, radiotherapy and chemotherapy were given by different clinicians in different settings (out-patient vs. in-patient) and to patients with different diagnoses and different stages of disease. These additional factors could influence the patients' appreciation of their disease and its treatment but are so closely related to the treatment itself that it would be difficult, if not impossible, to define the independent effects of each.

Although being diagnosed as having cancer and receiving treatment has many immediate psychological and social effects, which are possibly universal and may be very severe, they do not seem to be permanent. Despite increased anxiety about health, most patients cured of testicular cancer report few long-term psychosocial effects. Patients receiving chemotherapy have more physical effects than those treated with radiotherapy but report less psychosocial effects. Many patients feel that their illness has had beneficial effects and that their relationships with friends and family have improved.

Acknowledgements—The authors wish to thank the following consultants for allowing their patients to be included in this study: Dr A.J. Banks, Dr D. Spooner, Dr J.J. Mould, Dr A.D. Chetiyawardana, Dr T.J. Priestman, Queen Elizabeth Hospital, Birmingham; Dr R.J. Grieve, Dr T.W. Backhouse, Dr R.N. Das, Dr L.A. Birchall, Coventry and Warwickshire Hospital, Coventry. We also thank Dr Krys Kelly for statistical advice.

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