

Anxiety and depression in patients with lung cancer before and after diagnosis: findings from a population in Glasgow, Scotland

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The diagnosis of cancer is often linked to psychological morbidity. It has been reported that 47% of patients with cancer experience periods of anxiety or depression or both.¹ Little is known about cancer patients' psychological status before the diagnosis,² this makes it difficult to comment precisely on the effect of the diagnosis of cancer on the patients' psychological state. This paper reports psychological data from a prospective study comparing anxiety and depression in lung cancer patients before diagnosis and three months after. These data were collected as part of a study on quality of life in patients with lung cancer.

Subjects, methods, and results

A population based study of quality of life in patients with lung cancer was conducted between January 1995 and April 1996 in the northern sector of Glasgow, Scotland. Quality of life was assessed using a series of interviewer administered questionnaires including the Hospital Anxiety and Depression Scale (HADS). This is a 14 item questionnaire consisting of two sub-scales, anxiety and depression. Each item is rated in a 4 point scale, giving maximum scores of 21 for anxiety and depression. Scores of 11 or more on either sub-scale is considered to be a significant "case" of psychological morbidity, while scores of 8 to 10 represent "borderline" and 0 to 7 "normal".³ The HADS was administered at two points, baseline and follow up. All suspected lung cancer patients were identified by the respiratory consultants after referral from their general practitioners and the questionnaire was administered at their first clinic visit, before the diagnosis was made. At baseline both patients and the interviewer were blind to the final diagnosis. Follow up assessment was scheduled three months after diagnosis and completion of initial treatment. In addition, patients' global quality of life was measured using a 2 item scale consisting of two questions about patients' general well being and quality of life. Each item is rated in a 7 point scale ranging from one (very poor) to 7 (excellent). This was a sub-scale of the European Organisation for Research and Treatment of Cancer Quality of life Questionnaire (EORTC QLQ-C30) and its reliability and validity is well established.⁴ The EORTC QLQ-C30 is the only cancer specific questionnaire that has been cross nationally and cross culturally developed.⁵ Patients' characteristics including sex, age, marital status, socioeco-

nomics status, were also recorded. Additional clinical information were extracted from case notes (histology, disease extent, etc).

In all, 129 lung cancer patients were interviewed, 77 (60%) were men, the mean age was 67.5 (SD = 9.1), most were married (n = 77, 60%) and from severely deprived areas (n = 74, 57%). Most of the patients had limited disease (n = 101, 78%) with a good or a normal performance status (n = 114, 89%). Eighty one patients (63%) had an active treatment, whereas the remaining 48 (37%) received the "best supportive care".

At follow up 96 patients were alive. Of these 82 agreed to be re-interviewed. Of the remaining 14 patients, six were terminally ill and eight refused. There were no statistically significant differences in patients' demographic and clinical status at baseline and follow up assessments. Analysis was restricted to those for whom both baseline and follow up data were available.

At baseline most lung cancer patients had normal score on both anxiety and depression sub-scales; 84% and 77% respectively. Patients with borderline status of anxiety (6%) and depression (11%)—potential cases of psychological morbidity—were nearly doubled at follow up; 11% and 22% respectively. Eight (10%) patients had severe anxiety symptoms and 10 patients (12%) had symptoms of serious depression at their first presentation to chest physicians. At follow up these decreased by 1% for anxiety and increased by 10% for depression compared with baseline assessments. It is worth noting that at baseline the cases that were not diagnosed as having lung cancer were significantly more anxious, but they had similar score on depression sub-scale (the results are not shown and are available from the corresponding author). These patients were not followed up.

As lung cancer patients' scores on the HADS were not normally distributed, Wilcoxon matched pairs signed rank test was applied to compare baseline and follow up anxiety and depression scores. There was a statistically significant difference between baseline and follow up depression scores ($p = 0.0002$), but not for anxiety ($p = 0.64$). Table 1 shows the results.

Mann-Whitney U test and Kruskal-Wallis one way analysis of variance were performed to compare anxiety and depression with regard to lung cancer patients' sociodemographic, clinical characteristics, and treatment received. There was a statistically significant difference

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Table 1 Scores on the HADS for patients with lung cancer before and after diagnosis

Scores	Anxiety (n=82)		Depression (n=82)	
	Before diagnosis No (%)	Follow up No (%)	Before diagnosis No (%)	Follow up No (%)
Normal (0-7)	69 (84)	66 (80)	63 (77)	46 (56)
Borderline (8-10)	5 (6)	9 (11)	9 (11)	18 (22)
Case (11-21)	8 (10)	7 (9)	10 (12)	18 (22)
Mean scores (SD)	4.56 (4.05)	4.52 (4.22)	5.28 (3.91)	7.06 (4.66)
Wilcoxon pairs test	z = -0.46, p = 0.64		z = -3.78, p = 0.0002	

between anxiety and depression and global quality of life both at baseline (anxiety, $z = -3.43$, $p = 0.0006$; depression, $z = -4.51$, $p < 0.0001$) and at follow up (anxiety, $z = -2.93$, $p = 0.003$; depression, $z = -3.71$, $p = 0.0002$), indicating that those with lower level of quality of life had more anxiety and depression. The difference did not reached statistical significance for other variables studied.

Comment

The prospective nature of this study is extremely important and suggests that severe depressive illness is significantly associated with lung cancer diagnosis and should not be underestimated. This might be because of several reasons including personality factors, past psychiatric history, presence of metastases, not receiving a specific treatment, lack of social support system, lack of information, and coping behaviour.²⁻⁶ The decrease in patients' anxiety score after the diagnosis of lung cancer also may be explained by the fact that treatment can play a helpful part in the ability of some patients to adjust psychologically to their diagnosis. As Bernhard and Gans⁶ discuss, in lung cancer it is difficult to discriminate between underlying biological and psychological factors causing depression. Therefore, altered mood may be simply labelled as appropriate to a lung cancer diagnosis, or patients may not want to show their distress, but effective lung cancer care requires measures of psychological adjustment before and after treatment, so that appropriate supportive care (for example, psychiatric consultation) can be pro-

vided. As recommended, "such interventions should no longer be seen as an optional extra but as an integral part of every patients' management plan".⁷ The presence of anxiety and depression at both baseline and follow up were significantly associated with global quality of life impairment regardless of patients' demographic and clinical characteristics. Although global quality of life is a crude measure of patients' perceived general health and health related quality of life, it has been shown that it is an important indicator of patients' physical state, role and social functioning.⁵⁻⁸ Perhaps these all contribute to patients' psychological disorder. Thus, to improve quality of life in lung cancer patients the recognition and treatment of psychological morbidity is essential.

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