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Research report

Thoughts of self-harm and depression as prognostic factors in palliative care patients

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ABSTRACT

Background: This study explored whether scores indicating depression on Patient Health Questionnaire 9 and patient reports of thoughts of self-harm were prognostic factors for survival in advanced cancer.
Method: Patients with advanced cancer were recruited into the study from palliative care day units and invited to complete measures for depression which included Patient Health Questionnaire 9, and Edinburgh Depression Scale at recruitment, and at 8, 16 and 24 weeks.
Results: 629 patients were recruited into the study; 139 (22%) died during 6 months follow up and 235 patients (37.4%) died during the study period. The age range of patients recruited was 21–94 years—mean age 66 years and 67% of patients recruited were female. The overall median survival of patients recruited was 37.1 weeks (95% CI 36.0, 39.9 weeks) (range 0–116 weeks). The estimated median survival time of patients whose baseline PHQ9 ≥ 9 was 36 weeks with 95% confidence interval of (31, 39) and for patients whose baseline PHQ9 < 9 was 39 weeks (95% CI 37, 45)—baseline PHQ9 alone was predictive of death. The median survival times were 37.9 weeks for patients who did not indicate thoughts of self-harm and 34.7 weeks for patients who reported thoughts of self-harm at baseline suggesting that risk of death was 1.4 times higher among patients who reported thoughts of self-harm.
Limitations: Patients were recruited only from within palliative day care units and assessments were made only by validated tools and not by clinical interviews.
Conclusions: In this large longitudinal study, moderate to severe depression as measured by PHQ9 and patient reports of thoughts of self-harm were associated with earlier mortality. This paper supports the need for supporting patients psychologically at the end of life and specifically in treating depression in this patient group.

1. Introduction

Depression can lead to morbidity and has been reported as an independent predictor for earlier death in patients with cancer (Gripp et al., 2007; Pinquart and Duberstein, 2010; Lazure et al., 2009; Lloyd-Williams et al., 2009). Thoughts of self-harm are not infrequent in patients with advanced cancer (Lloyd-Williams, 2002) and are linked to the presence of psychological morbidity (Spencer et al., 2012); however it is not known whether thoughts of self-harm themselves are prognostic factors for earlier mortality. Determining prognosis is complex in patients with advanced metastatic cancer and while studies have reported that patients frequently ask about prognosis (Gilbertson-White et al., 2011)—a recent large study (Gwilliam et al., 2011) found that 11 core variables predicted 2 weeks and 2 months survival. However, this study focussed mainly on physical variables and biochemical profiles and although the Abbreviated Mental Test Score was used (and found to be one of 11 core variables) there were no specific measures of psychological well-being.

A study by Cheung et al. (2009) did not find psychological distress to be predictive of time to death in cancer patients and a review carried out by Maltoni et al. (2005) did not include depression as a clinical predictors for survival. A longitudinal study by Liu et al. (2011) reported that "feeling sad" was a predictive factor for survival in a study of 256 hospitalised patients with advanced cancer where the mean survival was 49 days, but did not report survival benefit. Most of these studies were in hospitalised palliative care patients with a short prognosis where any effective treatment of depression would be difficult due to the deterioration of the patient. In a meta-analysis including all cancer patients (Satin and Linden, 2009) depression was found to predict

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mortality and effect remained after adjustment for clinical prognosticators, similarly Gao et al. (2010) found higher scores on GHQ-12 items predicted shorter survival in palliative care patients. There is marked uncertainty associated with interpretation of depression scores at end of life (Reeve et al., 2008) and the suggestion that depression increases at the end of life has not been confirmed in recent studies (Lichtenthal et al., 2009; Rabkin and McElhiney, 2009; Cheung et al., 2009). The difficulties are also compounded by uncertainties related to best ways to measure depression in this patient population and the small numbers of patients included in many studies.

We report the results of finding a large longitudinal study of 629 palliative care patients which was carried out to determine whether depression and thoughts of self-harm are predictors for earlier mortality in patients with advanced cancer.

2. Patients and methods

2.1. Design and study

This study was carried out in 20 palliative care day units in North West of England who all accepted referrals for patients with advanced cancer. Patients are referred to palliative care day units (usually located within a hospice) for symptom control and social support and usually attend for at least 1 day weekly. Recruitment into the study started on 1st November 2007 and data collection ended on 28th February 2010.

2.2. Patients

The inclusion criteria were patients with locally advanced or metastatic disease over the age of 18 years and believed by hospice day care staff to have at least 6 months estimated survival in order to be able to complete the follow up for the study. There was no upper age limit for the study. Exclusion criteria were not being able to speak or read English; a non-cancer diagnosis and cognitive impairment. All patients were assessed using the Abbreviated Mental Test Score (AMTS) (Hodkinson, 1972) which is a 10 point dichotomous scale with a score of 6 or less indicative of cognitive impairment—a score of 6 or less was an exclusion for participation in the study.

2.3. Procedure

Eligible consecutive patients attending palliative day care units with a diagnosis of locally advanced or metastatic cancer and who were believed by hospice day care staff to have at least 6 months estimated survival were informed about the study by hospice day care staff and the team of researchers who were based within the hospices. Patients who were interested in the study were invited to complete a reply slip to ask a researcher to contact them. All patients received detailed information and were asked to give written consent prior to participating in the study. At recruitment, patients were given the questionnaires and asked baseline demographic information—this data was collected by face to face interview with member of the research team and the interviews were conducted in the hospice or within the patient's own home. Patients usually completed follow up questionnaires by post, with a small number opting for researcher contact due to clinical issues e.g. patients with poor eyesight etc. Any patient found to be a case of depression on either of the depression measures at any time point was referred onto the day care nurse or member of clinical staff and managed according to each unit's clinical practice. Full ethical approval for the study was obtained from the Research Ethics committee 07/Q1505/24.

2.4. Questionnaires

Patients were invited to complete two tools to assess for depression namely PHQ9 and EDS as a secondary aim of the study was to determine cut off thresholds for severity for Edinburgh Depression scale—the findings of which will be reported at a later date. The Edinburgh Depression scale (EDS) (Cox et al., 1987) is a 10 item scale and each item is rated on a 0–3 scale. The EDS has been previously validated in palliative care patients against a structured psychiatric interview and was found to have acceptable validity (Lloyd-Williams et al., 2000) with a cut off threshold of 13 indicating the presence of depression and is widely used in screening for depression in palliative care. The PHQ9 is a self-report measure and consists of 9 items selected to assess the presence of the DSM-IV criteria for Major Depressive Episode using a 4-point response scale and has validated cut offs for mild, moderate and severe depression (Spitzer et al., 1999) and has been validated for use with a cancer population (Thekkumpurath et al., 2011). At recruitment, the following independent variables were collected age, sex, marital status, past history of depression, site of primary cancer and metastases, date of diagnosis, current medication including antidepressant medication. This information was collected from the patients and verified from the medical case notes. At 8, 16 and 24 weeks follow-up patients were invited to complete the EDS and PHQ9. Performance status was assessed at baseline using ECOG performance status (Oken et al., 1982) which is scored from 0–4—a score of 0 indicating no dependence and 4 maximum dependence. This was carried out by the researchers who utilised the ECOG criteria for performance status.

2.5. Statistical analysis

Data was managed via the MACRO database and this study was supported by the Cancer Trials Unit. Statistical significance was set at $p < 0.05$ and analyses were conducted in the statistical package R version 2.9.2 for Windows. Descriptive statistics were calculated along with confidence intervals. Wilcoxon signed ranks test (non-parametric version of the "paired" *t*-test) was used to assess whether there was any difference between the baseline and final visit of each patient since scores were not normally distributed. Kaplan–Meier survival function was used to summarise survival between groups. The Cox proportional-hazards regression model was used to determine whether depression or self-harm predicted survival by comparing survival distributions between two groups and to estimate corresponding hazard ratios. Joint modelling of longitudinal depression scores and time to death was used to estimate the relationship between the variation of scores over time on survival.

3. Results

3.1. Recruitment and attrition

A total of 921 patients who met eligibility criteria were given information leaflets by day care staff; 694 patients requested the researcher to contact them and 629 patients participated in the study. The main reasons for non-participation were patients not feeling well enough to participate in a 6 months longitudinal study. Ethical approval was not given to collect data on non-participants.

Six hundred and twenty nine patients completed baseline measures and their data were included in the final analysis; 494 patients (78.5%) completed 8 weeks follow-up; 405 (64.3%) completed 16 weeks follow up and 349 (55.5%) completed 24 weeks follow-up. The majority of follow-up data was collected by post, with some patients opting for face to face interview. We attribute the excellent follow-up rates to researchers being present