

Is weight change an appropriate marker of nutritional intervention in patients with cancer?

C. Baldwin¹, A. Spiro¹, P. J. Milligan¹, D. C. Cunningham² and H. J. N Andreyev²

¹Department of Nutrition & Dietetics, Kings College London, London SE1 9NH, UK and ²Department of Medicine, Royal Marsden Hospital, Fulham Road, London SW3, UK

Weight loss is a predictor of poorer outcome in patients with cancer⁽¹⁾. It is recommended that patients with weight loss are identified early and offered nutritional intervention^(2,3). Dietitians often use weight as an indicator of progress when monitoring nutritional interventions. Nutritional intervention has been associated with improved energy intake but the effects on weight are variable⁽⁴⁾. Previous data have suggested that untreated patients lose weight from diagnosis to death⁽⁵⁾. The natural history of weight change in cancer patients on treatment is unknown.

The aims of the present study were, in patients with gastrointestinal (GI) and lung cancers and weight loss who were receiving treatment: (1) to describe weight change over the course of treatment; (2) to examine the influence of nutritional intervention and clinical outcome on weight.

Patients with advanced GI and lung cancers who had agreed to participate in a study of oral nutritional intervention (dietary advice, nutritional supplements, dietary advice + nutritional supplements) compared with no intervention were included in this analysis. Subjects were newly diagnosed and planned to receive palliative chemotherapy. Weight was measured at study entry and then after 6, 12, 26 and 52 weeks. Background demographic and clinical information was obtained from electronic patient records. Data were examined for differences over time, taking into consideration the influence of site of disease and nutritional intervention using Friedman tests and ANOVA. Differences in mean weight change were examined using an independent sample *t* test.

In total 299 patients were included, 209 males and ninety females, mean 64 (SD 11) years of age. A total of 235 patients had GI cancer (102 colorectal, 115 upper GI cancers, eighteen other) and sixty-four patients had lung cancers. Patients had experienced a mean weight loss of 10 (SD 5) kg at baseline. The numbers of patients with weight data at each time point declined over time from 299 at baseline, 233 at 6 weeks, 188 at 12 weeks, 120 at 26 weeks and twenty-nine at 52 weeks. Analyses were therefore conducted from baseline to 12 and 26 weeks. The overall mean weight change from baseline to 26 weeks was -0.43 kg (95% CI $-1.5, 0.64$). There were no significant differences between weights at each time point ($P=0.093$). This result was unaffected by site of disease and by nutritional intervention. Patients who died prematurely (before 26 weeks) were significantly more likely to lose weight in the first 12 weeks of treatment (mean -0.66 kg (SD 3.8) than patients who survived beyond 26 weeks (mean 0.6 kg (SD 2.5), $P=0.002$). This effect was independent of nutritional intervention.

These data suggest that there is no clear pattern to weight change over time in patients with GI and lung cancers receiving treatment. Patients who lose weight early in the course of their treatment are significantly more likely to die prematurely than those who gain weight. This effect is unchanged by simple nutritional interventions. Weight change is a marker of disease progression and not nutritional intervention.

1. Andreyev HJN, Norman AR, Oates J *et al.* (1998) *Eur J Cancer* **34**, 503–509.
2. Arends J, Bodoky G, Bozzetti F *et al.* (2006) *Clin Nutr* **25**, 245–259.
3. National collaborating Centre – Acute Care (2006) CG32 Nutrition support in adults: Full guideline. <http://www.nice.org.uk/guidance/index.jsp?action=download&o=29981>
4. Brown JK (2002) *Oncol Nurs Forum* **29**, 517–532.
5. Wigmore SJ, Plester CE, Richardson RA *et al.* (1997) *Br J Cancer* **75**, 106–109.