**Pancreatic enzyme replacement therapy in pancreatic cancer: a retrospective cohort study**

Introduction

Pancreatic cancer has a poor prognosis; a minority of patients are suitable for surgery and many will not be candidates for palliative chemotherapy. As such, pancreatic enzyme replacement therapy (PERT) is one of the few widely-suitable treatment options that can confer both survival and quality of life benefits (Iglesia et al., UEG, 2020). The National Institute for Health and Care Excellence (NICE) recommends PERT is offered to all unresectable pancreatic cancer patients (NICE: Pancreatic cancer in adults: diagnosis and management, NG85, 2018). The aim of this study was to evaluate adherence to this guideline and its impact on survival.

Methods

This retrospective cohort study included all patients diagnosed with inoperable pancreatic cancer at a district general hospital between January 2017-2021. Patients were identified from the MDT database with a radiological or histological diagnosis; those undergoing surgical treatment were excluded. Patient age, performance status, cancer stage, and treatment received were recorded. We identified the PERT prescribing rate and compared the median survival times from diagnosis using one-tailed T-tests and Chi-squared tests where appropriate.

Results

This study identified 303 patients eligible for inclusion. Of the 3 patients remaining alive, survival duration at the time of analysis was used. 163 (54%) of these patients received PERT. Those receiving PERT had greater survival times (see figure 1), with a median survival of 158 versus 40 days in those without PERT (P=<0.01); were younger (median age 74.5 vs 79; p=<0.01); tended to have better performance status (67% PS 0 or 1, vs 37%; p=<0.01); and were more likely to receive chemotherapy (45% vs 16% p=<0.01).

Those receiving PERT had greater median survival times in each category of performance status (PS 0: 208 vs 73 days (p=<0.01); PS 1: 198 vs 76 days (p=<0.01); PS 2: 106.5 vs 38 days (p=0.07); PS 3: 93 vs 39 days (p= <0.01)). Median survival was also greater in both those receiving chemotherapy (304 days with PERT vs 100.5 without (<p=0.01)) and those not receiving it (93 days with PERT vs 35 without (p=<0.01)). There was a statistically non-significant trend of greater median survival time in the PERT cohort across all cancer stages.

Conclusions

Despite NICE guidelines, a significant proportion of patients do not receive PERT. While there is likely to be a degree of confounding from selection bias, PERT is shown to be associated with a significantly increased life expectancy independent of performance status and chemotherapy treatment decisions. We recommend considering interventions to improve prescribing rates for both clinical merit, and to enable further examination of outcomes with a wider patient cohort.

**Figure 1**