Palliative Prognostic Index (PPI) as a prognostic tool in patients receiving care at home: Retrospective study

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ABSTRACT

- Background: Predicting survival in patients with advanced cancer receiving care at home is quite challenging, because we usually depend on subjective data. The palliative prognostic index (PPI) is commonly used to predict life the life expectancy.

- Methods: Retrospective analysis of records of 80 patients received home health care visits at King Hussein Cancer Center, in Jordan.

- Results: PPI has a high sensitivity to predict survival in the last 3 weeks (sensitivity of 97.5%). The presence of delirium and dyspnea at rest are highly specific to approaching toward the end-of-life.

- Conclusion: PPI is a useful tool to predict survival. However, more prospective studies should be done in inpatient and home care settings to determine the cutoffs values to predict survival accurately.

BACKGROUND

Predicting survival in patients with advanced cancer is quite challenging and stressful to the patient, family and the clinician. Improved prognostication would enable patients and their carers to be better prepared for their impending death, and would allow clinicians to make better informed decisions about place of care and goals of care.

Palliative Prognostic Index (PPI) is a useful tool to predict survival, it is the sum of Palliative performance scale (PPS) and other clinical variables (oral intake, edema, resting dyspnea, and delirium). The PPI can acceptably predict whether or not a patient will survive >3 or >6 weeks, and it has been tested by other authors in inpatient setting, but was not studied at patient's home.

OBJECTIVES

- To predict survival for patients in home care setting
- To validate PPI as a prognostic tool at home setting
- To study the poor prognostic signs that are linked with death.

METHODS

- We conducted this study on 80 patients receiving home care visits at King Hussein Cancer Center in Amman, Jordan between 1 January 2017 and 31 December 2017.

- Conducted retrospective analysis of PPI scores for the patients at home, in the last 48 hours of life, 3 weeks, and 6 weeks before death.

- Inclusion criteria were: patients receiving home care visits, followed by home care team for 6 weeks before death, and spent the last 3 days at home.

- Patients who died at the hospital were excluded.

RESULTS

- In our sample, we had 80 patients were followed by home care team at King Hussein Cancer Center

- Average age at time of death was 63.5 years (22-90 years old)

- 58.75% were females (n= 47)

- PPI score was calculated within 48 hours of death

- The results showed that average score PPI 48 hours before death was 10 (ranges between 2.5 – 15)

- The performance status in the last 48 hours according to Palliative Performance Scale (PPS) was 10 or 20% in 65 patients (81.25%) and between 30 and 50% in 15 patients (18.75%), none of our patients had a performance status above 50%

- The oral intake was severely reduced in 58 patients (72.5%), and was moderately reduced in 21 patients (26.25%) and was normal in 1 patient (1.25%)

- 59 patients had lower limbs edema (73.75%) and 36 patients had shortness of breath at rest (45%) and 34 patients had delirium (42.5%)

- 4 of our patients had a PPI score of 15 in the last 48 hours of their life.


48 hours before death
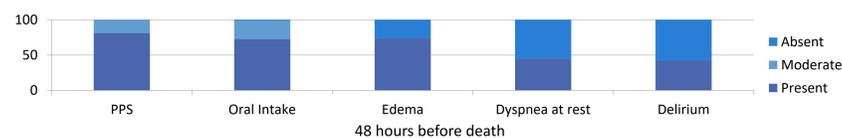
- Three weeks before death the results were different

- The average PPI score was 4.5 (ranges between 2 and 12)

- 74 patients had PPS score between 30 and 50% (92.5%), 4 patients had a score of 20 or 10 and 2 patients had a score above 50.

- Oral intake was severely reduced in 12 patients, and moderately reduced in 58 patients and normal in 11 patients.

- Edema was present in 38 patients. Dyspnea in 9 patients as well as delirium.

RESULTS

3 weeks before death
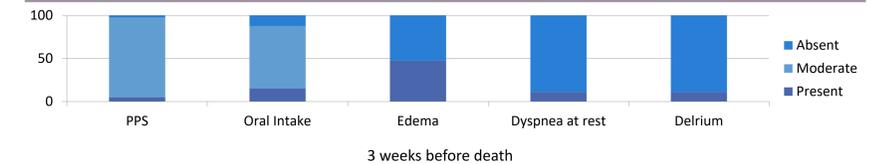
- Six weeks before death, the average PPI score was 3.5 (ranges between 0 – 10)

- Three patients had a performance status below 30, 69 patients had a performance status between 30 and 50, and 8 patients had a performance above 50

- Four patients had severely reduced oral intake, whereas 45 patients had moderately reduced intake, and 31 patients with normal intake.

- 19 patients had edema in lower limbs. None of the patients had dyspnea at rest and only 4 patients had delirium

6 weeks before death
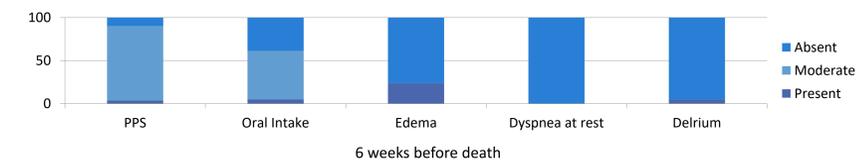
- Dyspnea at rest and delirium were found to be the most specific factors related to a poor prognosis, with death should be expected within less than three weeks. Specificity of delirium is 83.64% (95% CI 71.2% - 92.23) and sensitivity 32.38% (95% CI 23.57 – 42.21%). Whereas for dyspnea at rest the specificity is 83.04% (95% CI 70.2% - 91.93%) and sensitivity is 33.64% (95% CI 24.8% - 43.42%)

- The cut-offs values for PPI score is still controversial, but we considered a cut-off value of 6 to predict mortality within 3 weeks, and this result has a sensitivity of 97.5% (95% CI 91.26% - 99.7%) and a specificity of 75% (95% CI 64.06% - 84.01%), with a negative predictive value of 96.77%.

CONCLUSIONS

- PPI is a useful prognosticator of life expectancy of patients in palliative care receiving their care at home

- The presence of delirium and dyspnea at rest are linked to a poor prognosis

- PPI score below 6 can predict a survival of more than 3 weeks