Determining the value of routine Palliative Prognostic Index (PPI) calculations in a palliative care unit

D.A. Thaker, A. Veltre, A. Smith, C. Orth, B. Stafford;
Palliative Care Unit, Redcliffe Hospital, Brisbane, QLD, AU

Dr. Darshit A Thaker

Medical Oncologist & Pall. Med. Physician

RDH, RBWH, HBH

QLD Health, Australia

Senior Lecturer, University of Queensland

SINGAPORE 2015 ESMO ASIA

18-21 DECEMBER SINGAPORE

Disclosure slide

- I have nothing to declare.

INTRODUCTION

- Its difficult to provide accurate prognosis to terminally ill patients.

- Most patients want full disclosure and honest opinion about prognosis.

- A study confirmed that only 20% of physicians could accurately predict the prognosis.*

- Palliative Prognostic Index was proposed by Morita et al. in 1999.

*Christakis NA, Lamont EB, Smith JL, Parkes CM. Extent and determinants of error in doctors' prognoses in terminally ill patients: prospective cohort study. BMJ 2000; 320: 469–473.

Palliative Prognostic Index

Factor	Partial score
PPS 10–20%	4
PPS 30–50%	2.5
PPS >50%	0
Delirium	4
Dyspnoea at rest	3.5
Oral intake mouthfuls or less	2.5
Oral intake reduced but more than mouthfuls	1
Oral intake normal	0
Oedema	1

Palliative Prognostic Index

- Higher the score the worse the prognosis.

- Score > 6 , 3 week survival was predicted with a sensitivity of 80% and a specificity of 85%.

- Prospective study on prognostication based on clinical experience (N=150) vs. employing the PPI (N=108).*

- PPI demonstrated a reduction in incorrect survival prediction by 28 days or more (42% vs 23%, P<0.01).

*Morita T, Tsunoda J, Inoue S, Chihara S. Improved accuracy of physicians' survival prediction for terminally ill cancer patients using the Palliative Prognostic Index. Palliative Medicine; September 2001, Vol. 15 Issue 5 p 419

AIM

- Revalidation of the Index.

- Assess the usefulness of the Index in Cancer and Non-Cancer Palliative patient population.

- Assess the usefulness of the wkly scoring of the Index.

Methods

- 106 patients admitted over a three month period in 16 bedded palliative care unit were included in the study.

- Two main categories: (A) Cancer diagnosis (B) Non-cancer diagnosis

- Further subgroups based on the PPI score on admission:

➢Group 1: PPI < 4

➢Group 2: PPI of > 4 but ≤ 6

➢Group 3: PPI of > 6.

- During admission, the PPI score was reassessed every week and recorded.

- Outcome of each patient was recorded.

Results: All patients

All Patients	Number of Patients	Median Survival (days)	Average Survival (days)	Males	Females	Mean Age (years)
Group 1 (PPI<4)	29	32	70	22	7	64
Group 2 (PPI 4-6)	15	14	24	8	7	70
Group 3 (PPI>6)	62	4.5	10	33	28	75
Total	106			64	42	

Results : Category A (Cancer patients)

Cancer Patients	Number of Patients	Median Survival (days)	Average Survival	Males	Females	Mean Age
Group 1 (PPI<4)	27	52	72	21	6	67
Group 2 (PPI 4-6)	15	15	17	8	7	71
Group 3 (PPI>6)	34	5	8.5	18	16	74
Total	76			47	29	

Results: Category B (Non-cancer patients)

Non-cancer Patients	Number of Patients	Median Survival (days)	Average Survival (days)	Males	Females	Mean Age (years)
Group 1 (PPI<4)	3	50	138	2	1	60
Group 2 (PPI 4-6)	00					
Group 3 (PPI>6)	27	4	9	15	12	78
Total	30			17	13	

- 12 patients had PPI changed throughout the admission, from lower PPI to higher PPI.

- When a PPI score >6 was used as a predictor of <3 week survival for the entire population (N=106), it had a sensitivity of 77% (95%CI 66-86%) and specificity of 70% (50-86%).

- For cancer population (N=76), PPI score >6 had a sensitivity of 69% (95%CI 55–80%) and specificity of 72% (95%CI 50-89%) to predict survival of < 3 weeks.

- For non cancer population (N=30), PPI score >6 had a sensitivity of 96% (95% CI 80-100%) and specificity of 60% (95% CI 15-95%) to predict survival of < 3 weeks.

All Patients

	Positive Predictive Value (%)	Negative Predictive Value (%)	Sensitivity (%)	Specificity (%)
PPI <4	94	24	72.5	70
PPI >6	87	38.5	77	70

Conclusion

- Cancer patients with lower PPI (< 4) on admission had an average survival of >6 weeks.

- Weekly calculation of PPI during admission can help to predict changing prognosis and notify patients and their families in time.

- Dynamic PPI scoring is also beneficial for discharge planning if low score remains stable during admission.

- Most of the Patients with a non-cancer diagnosis had PPI of >6. It confirms that this group of patients are referred to the palliative care unit for end of life care and routine use of PPI is unlikely to be beneficial for prognostication.

Limitations and Future Directions

- Small single centre study.

- Only inpatients were included.

- Assessment of PPS and delirium can vary amongst clinicians and can affect calculation of PPI.

- Further evaluation of PPI in outpatient setting and community based setting is required.