

# Objective Palliative Prognostic Score among Patients With Advanced Cancer

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Reference: Chen, YT, et al. *Journal of Pain and Symptom Management*. April 2015. 49 (4): 690-696

## Abstract

**Context:** The accurate prediction of survival is one of the key factors in the decision-making process for patients with advanced illnesses.

**Objectives:** This study aimed to develop a short-term prognostic prediction method that included such objective factors as medical history, vital signs, and blood tests for use with patients with advanced cancer.

**Methods:** Medical records gathered at the admission of patients with advanced cancer to the hospice palliative care unit at a tertiary hospital in Taiwan were reviewed retrospectively. The records included demographics, history of cancer treatments, performance status, vital signs, and biological parameters. Multivariate logistic regression analyses and receiver operating characteristic curves were used for model development.

**Results:** The Objective Palliative Prognostic Score was determined by using six objective predictors identified by multivariate logistic regression analysis. The predictors include heart rate >120/min, white blood cells >11,000/mm<sup>3</sup>, platelets <130,000/mm<sup>3</sup>, serum creatinine level >1.3 mg/dL, serum potassium level >5 mg/dL, and no history of chemotherapy. The area under the receiver operating characteristic curve used to predict seven-day survival was 82.0% (95% confidence interval 75.2% - 88.8%). If any three predictors of the six were reached, death within seven days was predicted with 68.8% sensitivity, 86.0% specificity, 55.9% positive predictive value, and 91.4% negative predictive value.

**Conclusion:** The Objective Palliative Prognostic Score consists of six objective predictors for the estimation of seven-day survival among patients with advanced cancer and showed a relatively high accuracy, specificity, and negative predictive value. Objective signs, such as vital signs and blood test results, may help clinicians make decisions at the end of life.

## Strengths:

- N = 234
- Objective factors
- Some chosen factors are supported by previous evidence (although some not – e.g. previous chemo)

## Limitations:

- Retrospective
- One palliative care unit in a tertiary hospital, in Taiwan
- Limited to patients with advanced cancer
- Unsure what type/trajectory of patient illnesses – “Hospice Palliative Care Unit”
- Only predicts one-week mortality rates (“long survivors” >7 days, “short survivors” if died w/i 7d), which clinicians are able to determine quite accurately, but it is the intermediate survival range (>1 week, <few months) that we are less accurate at estimating.

## Applicability:

- TPCU admits patients at the very late stages of life, of which mortality rate is variable
- Routine bloodwork and vital signs are (at least) ordered on admission
- Lot of our practice focuses on *subjective* symptom management due to the nature of palliative care, and terminal symptoms such as dyspnea, anorexia, and poor performance are very strong predictors for the dying process. The OPSS, however, may be helpful in getting an idea of prognosis >7 or <7 days, which can be helpful in making end-of-life decisions and planning with families if there is uncertainty about the short-term prognosis. *However, larger prospective studies are required.*