

## **Prognostic Tools in Patients With Advanced Cancer: A Systematic Review**

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### **Abstract**

**Purpose** In 2005, the European Association for Palliative Care made recommendations for prognostic markers in advanced cancer. Since then, prognostic tools have been developed, evolved, and validated. The aim of this systematic review was to examine the progress in the development and validation of prognostic tools.

**Methods** Medline, Embase Classic and Embase were searched. Eligible studies met the following criteria: patients with incurable cancer, >18 years, original studies, population  $n \geq 100$ , and published after 2003. Descriptive and quantitative statistical analyses were performed.

**Results** Forty-nine studies were eligible, assessing seven prognostic tools across different care settings, primary cancer types, and statistically assessed survival prediction. The Palliative Performance Scale was the most studied ( $n = 21,082$ ), comprising six parameters (six subjective), was externally validated, and predicted survival. The Palliative Prognostic Score composed of six parameters (four subjective and two objective), the Palliative Prognostic Index composed of nine parameters (nine subjective), and the Glasgow Prognostic Score composed of two parameters (two objective) and were all externally validated in more than 2000 patients with advanced cancer and predicted survival.

**Conclusion** Various prognostic tools have been validated but vary in their complexity, subjectivity, and therefore clinical utility. The Glasgow Prognostic Score would seem the most favorable as it uses only two parameters (both objective) and has prognostic value complementary to the gold standard measure, which is performance status. Further studies comparing all proved prognostic markers in a single cohort of patients with advanced cancer are needed to determine the optimal prognostic tool.

**Strengths:** A well described systematic review that contains detailed information on a variety of prognostic tools. There is a useful discussion on the strengths and limitations of the different options.

**Weaknesses:** The limitations section is comprehensive in listing the limits of this review.

**Relevance:** There is a clear need to improve the value of the work done to date by comparing all prognostic markers in future research studies with a view to establishing a prognostic gold standard for daily clinical use.