

# The Clinical and Research Implications of Survival Prediction

Eduardo Bruera, MD

Dr. Bruera is Professor of Medicine and E.T. McGraw Chair in the Treatment of Cancer, Department of Palliative Care and Rehabilitation Medicine, The University of Texas M. D. Anderson Cancer Center, Houston.

Commentary on “Clinical Predictors of Survival in Advanced Cancer” by Paul Glare, MD (page 331).

**D**r. Glare has conducted an excellent review of the current knowledge and future challenges in clinical prediction of survival. This is one of the most important issues for patients and families when considering different treatments. Unfortunately, there has been limited research conducted in this important area, particularly in patients with advanced cancer. The following paragraphs summarize some issues regarding the clinical and research aspects of survival prediction.

## Inception Cohort

In most research studies, the inception point is related to clinical service delivery such as radiotherapy clinics,<sup>1</sup> palliative care units,<sup>2</sup> or oncology services.<sup>3</sup> A major limitation of these studies is the variability in timing of the referral of patients to different service areas. For example, the survival after referral to a tertiary palliative care program in a Canadian regional program<sup>2</sup> is significantly longer than the survival after referral to a palliative care program in an American comprehensive cancer center.<sup>4</sup> The different survival of the cohort limits the generalizability of the different prognostic factors.

Some studies have determined the inception point based on the disease stage and failure to respond to specific treatments.<sup>5</sup> This information is much more easily generalized. However, there can still be some differences among centers depending on the availability of second- or third-line therapy from some specific primary tumors.

Correspondence to: Eduardo Bruera, MD, Chair, Department of Palliative Care and Rehabilitation Medicine, University of Texas M. D. Anderson Cancer Center, Unit 008, 1515 Holcombe Blvd., Houston, TX 77030; telephone: (713) 792-6084; fax: (713) 792-6092; e-mail: ebruera@mdanderson.org

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It is important for clinicians to carefully consider the inception point and the overall survival of the cohort to evaluate to what extent the data presented are applicable to their own practice.

## Clinical Versus Research Outcomes

Cancer patients develop a number of devastating physical and psychosocial symptoms.<sup>6</sup> These patients undergo multidimensional assessment and multiple therapies. In this context, it is difficult to incorporate a number of new and complex assessments. Ideally, studies of survival prediction should use existing and clinically useful outcomes; otherwise, the adoption of these systems into clinical practice will be slow.

## The Influence of Therapy

Dr. Glare has provided an elegant summary of the evidence supporting the fact that the prognosis of a given patient is determined by the cancer type and stage, comorbidities, symptomatic and psychosocial factors, and therapy. This last major prognostic factor has not been considered in most survival prediction models. There are major differences in the way palliative care groups utilize drugs, diagnostic procedures, and even simple interventions such as hydration.<sup>7</sup> For example, in a patient who develops delirium accompanied by myoclonus and mild agitation, the outcome may be quite different if the patient undergoes an opioid rotation and hydration than if he or she receives and added benzodiazepine. From the clinical research perspective, it is important to understand the clinical findings within the context of palliative interventions.

## Patient and Family Understanding of Prognostic Issues

One of the most important challenges is how to present survival prognostic information in a way that is useful for patients and families in their decision making. The simple reporting of a

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survival percentage at a specific time point may be of limited value to patients and families who are not used to thinking in terms of risk. A key observation of predictions research is that patients and families are prepared to accept uncertainty, and that uncertainty might be more useful to them than erroneous predictions. The best ways to present uncertainty, to empower patients and families to do all the necessary planning, and to optimize patients' performance and quality of life are some of the major challenges of the delivery of palliative cancer care.

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