

Life expectancy estimation in prostate cancer patients

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The results reported by Leung and colleagues corroborate previous studies and illustrate that the inaccuracy of life expectancy (LE) prediction is transversal among physicians, regardless of their specialty or years of experience.¹⁻⁴ Although their conclusion stated that respondents tend to underestimate LE, interestingly, their results also showed that for patients with short LE (<10 years), respondents were more likely to overestimate LE rather than underestimate. For example, for the single patient with LE <5 years, virtually all respondents overestimated his LE. Similarly, for patients with short LE, inaccuracies of LE's estimation ranged from 10 to 15 years apart from the actual LE, and were frequently overestimated. Finally, the report shows that when LE estimation was simplified to a dichotomous dilemma, the actual 10-year LE represented the most difficult cut-off to estimate, reflecting an uncertain grey zone between the most sick and healthy patients, and where probably most prostate cancer patients would fit in.

However, does accuracy of LE really matter? Yes. Clinicians need the most accurate estimates of LE in situations in which there is uncertainty regarding the need for screening and/or aggressive local therapy. These situations may include patients diagnosed with low-risk or moderate-risk prostate cancer in which LE of candidates for attempted curative therapy should not be less than 10 years. Obviously, addressing the issue of LE only tackles part of the problem; even some patients with excellent LE do not need aggressive therapy for low-risk disease. Life tables, well known in the life insurance industry, are the oldest and possibly the most widely accessible scheme for prediction of individual LE. They represent an average prediction of the remaining life years based on sex and age characteristics of a group of

individuals. Moreover, life tables reflect population-specific characteristics. However, their ability to predict individual patients' LE, except for a few studies, is largely unknown.⁵ Reports have shown that LE in men of the same age differs significantly according to their overall health status. For example, 70-year-old men could have up to 11.3 years of LE disparity based solely on their comorbidities.⁶ Currently, apart from empiric LE predictions based on life experience and personal belief, various tools can assist physicians in the process of LE estimation in prostate cancer patients. These consist of life tables from Statistics Canada, comorbidity indices (i.e., Charlson Comorbidity Index) and multivariate prognostic models (i.e., nomograms).⁷⁻⁹ Accuracy of these models ranges from 68% to 84%, but unfortunately most of these tools lack of external validation and are frequently unknown in regular clinical settings. Physicians may unfortunately tend to rely solely on their clinical experience and, according to Leung and colleagues,¹ they will largely miss the target one out of three times.

What are the consequences of LE estimation inaccuracy? LE estimation is critical in low-risk prostate cancer management since it justifies screening strategies and delivery of definitive therapy. Although prevalent, death from prostate cancer is relatively rare in patients with low-risk disease within a 10-year period after diagnosis. Any treatments for patients who would die from other-cause or competing-risks before reaching the 10-year cut-off may be considered overtreatment and a "failure to deliver treatment benefits." If the potential benefit of any curative-intent therapy does not bring about longer LE there is no true effectiveness of the therapy in term of overall survival. This point is even more striking when morbidity, mortality, quality of life issues and costs for the health care system are taken into account.

Finally, LE estimation in men with prostate cancer remains a complex task. Assistance with models and statistical tools can improve its accuracy. In an era of computerized data and digitalized charts, clinicians should be able to easily

access local databases for long-term monitoring of LE estimations and ultimately improve patient selection. In the future, health-quality metrics for treatment effectiveness may need to include LE estimations accuracy at diagnosis, especially for patients with low-risk disease prostate cancer.

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