

Use of Bestand WorstCase Prognostic Calculations to Guide Clinical Decision Making

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INTRO

- Competing Risk makes clinical decision making in older adults with multimorbidity challenging
- Estimating prognosis can be limited by clinical unknowns

CASE

79 yo Veteran with multiple medical comorbidities including dementia and significant functional dependence with all ADLs presented to primary care with his son/ caregiver to discuss utility of workup for potentially metastatic skin cancer after locally advanced primary was identified the week prior in the context of weight loss and lymphadenopathy. Prior to the visit, multiple hypothetical calculations were done to guide the discussion.

RESULTS

- “Best-case” (no cancer, conveying competing risk of pre existing co-morbidities alone) life expectancy <5 years according to Schonberg index and 2.9 years or less according to the Lee Index.
- “Best-case” one year mortality according to Gagne Index was at least 46.8%.
- “Worst -Case” (metastases identified) life expectancy according to Palliative Performance Scale was 460 days.
- Based on available data, degree of potential improvement in prognosis from further workup and treatment thought to be low (likely <1 year) for this specific patient given competing risks of other advanced comorbidities
- The family elected, given this information, to pursue hospice rather than further workup.
- The patient passed peacefully in his home a month later

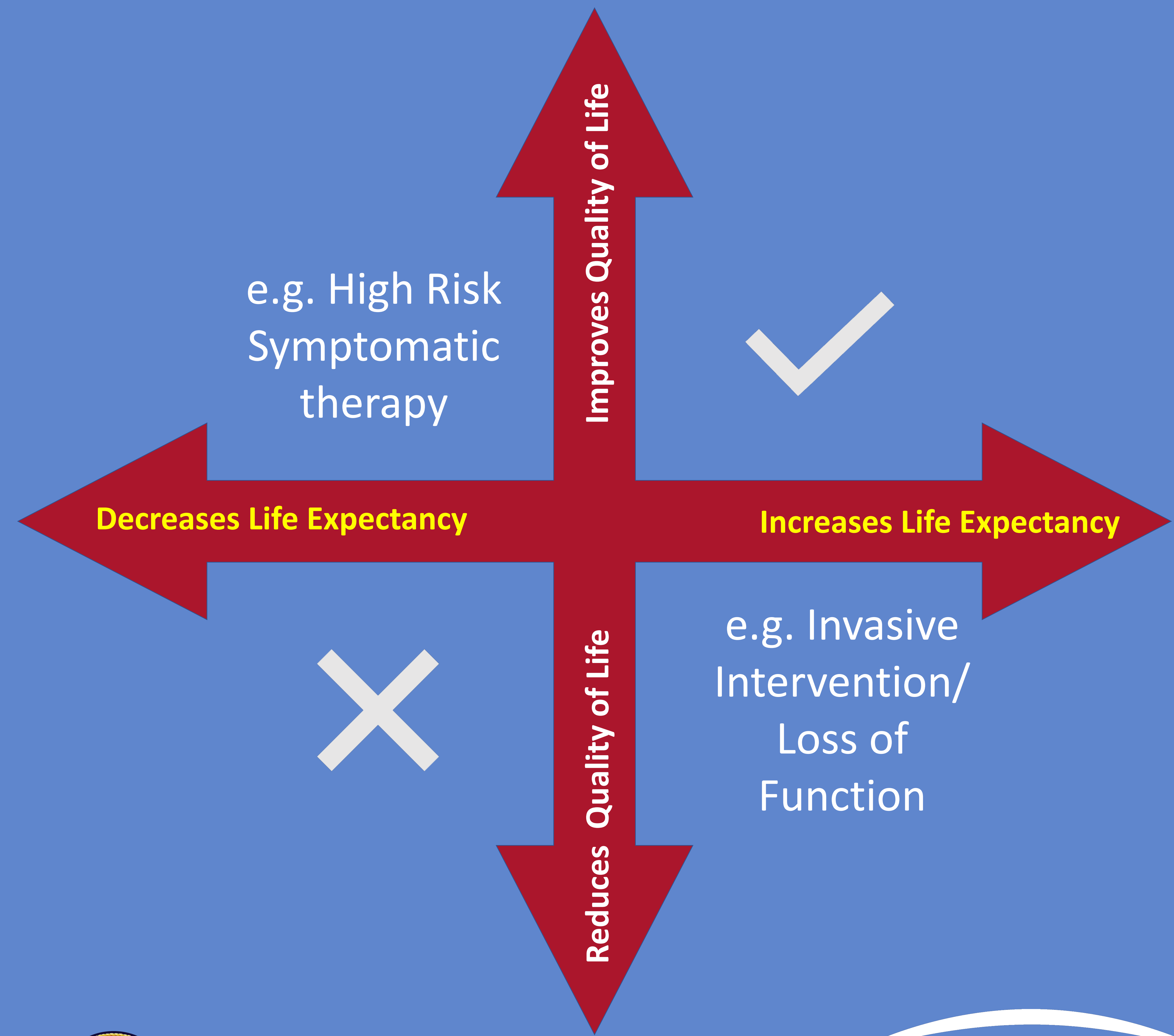
DISCUSSION

- Multiple hypothetical prognostic calculations improved shared decision making by informing potential impact on life expectancy when trial data is unavailable for those with many competing risks
- Caregiver previously had high degree of contention with medical team. Framing decision to work up in terms of life expectancy *changed* helped to align caregiver and team.
- This case demonstrates a powerful potential application for existing and new prognostic tools and clinical decision support in accounting for competing risk. Complementary skills in communication and evaluating complementary non-mortality domains are necessary to implement.

FINANCIAL DISCLOSURE None



Use ePrognosis to answer, “How might this plan change life expectancy (or not)?”



Context of Clinical Decision Making & Potential Avenue for CDS Tools

- **Degree** of an intervention or test’s impact on life expectancy (x axis) is essential in weighing it against impact on quality of life (y axis) when the two are potentially at odds
- RCTs fail to account for competing risk present in many older adults in evaluating **degree** of benefit of interventions
- Multiple prognostic calculations could allow improved determination of a test or intervention’s impact on an individual’s life expectancy (x axis) to inform clinical decision making. This is a potentially powerful avenue for machine learning applications and, later, clinical decision support
- Communication skills, knowledge of evidence base, and ability to elicit patient values and preferences are still essential in determining impact on non-mortality domains (i.e., quality of life/ y axis here) and conveying meaningful prognostic information to patients



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