Trajectories of Health-related Quality of Life in Patients with Advanced Cancer during the Last Year of Life: Findings from the COMPASS Study

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BACKGROUND: WHY IS PRE-DEATH HRQOL TRAJECTORY IMPORTANT?

- Studies showed that patients with advanced cancer experience steep decline in HrQoL during the final months of life *(Giesinger et al, 2011, Raijmakers et al, 2018, Lundh et al, 2006).*
- These patients prioritized maximizing HrQoL over life-prolonging care which improved with palliative care *(Lewis et al, 2019; Gaertner et al, 2017).*
- Nevertheless, heterogeneity in HrQoL trajectories among these patients has not been elucidated.

RESEARCH QUESTIONS AND HYPOTHESES

Aims

- Describe heterogeneity in joint trajectories of physical, social, emotional and functional HrQoL of patients with solid metastatic cancer during their last year of life.
- Identify patient socio-demographic characteristics that predict membership of the delineated joint trajectories.
- Assess associations between the delineated joint trajectories with (i) healthcare use, and (ii) place of death

Hypotheses

- *Females and patients with low educational attainment will be more likely belong to worse HrQoL trajectories and older patients will be more likely belong to better HrQoL trajectories.*
- *Patients with worse HrQoL trajectories will be associated with more hospital admissions, emergency department visits, longer length of hospital stay, and be more likely to die in the hospital.*

METHODS

Study Design

- Data of a prospective cohort study of 600 patients with advanced cancer (COMPASS)
- Data of 345 patients who died between September 2016 and December 2019 was used for this analysis

Participants

- Patients with stage IV solid cancer, age ≥ 21 years, ECOG ≤ 2
- Singapore citizens/permanent resident recruited from outpatient oncology clinics at two major public hospitals in Singapore
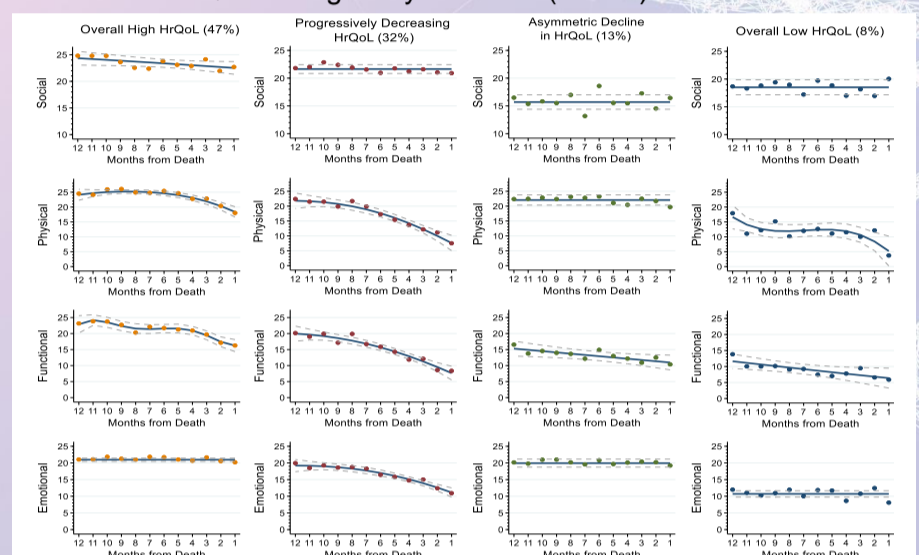
RESULTS

Patient Profile:
- 49% females, 72% married
- 57% with secondary education or higher

In the last year of life:
- Average age of patients at the start of year: 61 years old
- Average 3.2 hospital admissions
- 51% had more than one emergency department visit
- 62% died in the hospital

RESULTS (contd.)

Figure 1. Joint trajectories of social, physical, functional and emotional HrQoL during last year of life (n=345)

Using group-based multi-trajectory modeling, we identified four distinct trajectories of HrQoL
1) Overall high HrQoL
2) Progressively decreasing HrQoL
3) Asymmetric decline in HrQoL
4) Overall low HrQoL

Relative to patients with "Overall high HrQoL" trajectory, worse HrQoL trajectories were associated with:

- Patients aged ≤45 years (p-value=0.039), and those with primary education or less (p-value=0.012)
Suggests age and socioeconomic status (indicated by education attainment) can be used as predictors of HrQoL trajectory

- Longer hospital stay in last year of life (p-value=0.026) and higher likelihood to die in a hospice (p-value=0.005)
Suggests poorer HrQoL trajectories are associated with increased healthcare utilization

CONCLUSIONS

- Analysis demonstrated heterogeneity in deterioration of HrQoL among patients with advanced cancer at the last year of life.

- Results showed that patients aged ≤45years, those of lower socioeconomic status, with longer hospital stays and multiple hospital admissions experienced worse or rapid deterioration in HrQoL during their last year of life.

- Systematic monitoring of HrQoL, early identification and referral of high-risk patients to palliative care may provide timely relief and mitigate decline in HrQoL as well as reduce health care utilization.