

# Do Changes in Patient-Reported Outcomes Predict Survival in Patients with Diffuse Large B-Cell Lymphoma?



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## Background

- Patient-reported outcome measures (PROMs) including quality of life (QoL) and symptoms, assessed at a single time point, are shown to predict overall survival (OS) in cancer.<sup>1-4</sup>
- In practice, clinicians often use changes in a patient's cancer-related symptoms to evaluate treatment response and inform prognosis.
- Very limited efforts have been made to understand how longitudinal changes in PROMs may impact treatment outcomes, such as survival, particularly in patients with diffuse large B-cell lymphoma (DLBCL).

## Objective

- To explore whether changes in PROMs could predict survival, including both progression-free survival (PFS) and OS, in patients with DLBCL newly treated with obinutuzumab/rituximab plus chemotherapy in the GOYA Phase III study

## Methods

### GOYA study design

- A Phase III, multicenter, open-label, randomized global trial comparing the efficacy of obinutuzumab (GA101; G) in combination with CHOP (G-CHOP) versus rituximab and CHOP (R-CHOP) in previously untreated patients with CD20-positive DLBCL.
- Patient criteria:
  - Previously untreated DLBCL (N=1418)
  - Age ≥18 years
  - International Prognostic Index (IPI) ≥2 or IPI 1 not due to age alone or IPI 0 with bulky disease (on lesion ≥7cm)
  - Adequate hematologic function
  - ≥1 bi-dimensionally measurable lesion
  - ECOG Performance Status 0-2

### Longitudinal Changes in PROMs

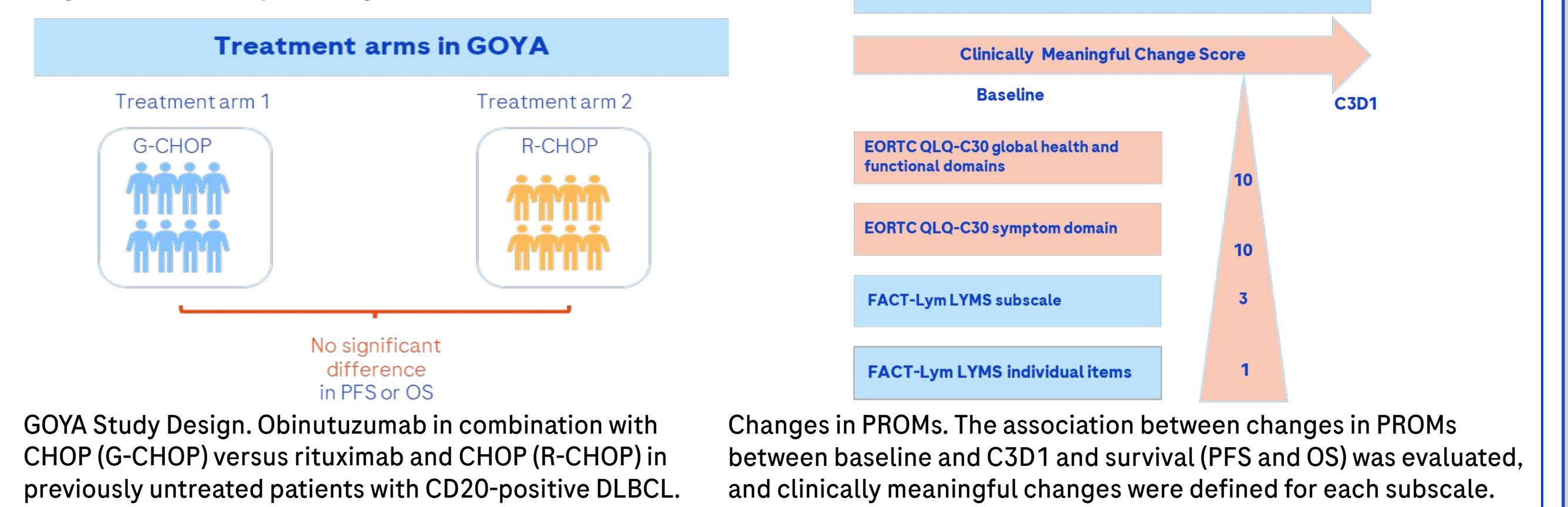
- Patients were included if they completed the European Organization for Research and Treatment of Cancer Quality of Life (EORTC QLQ-C30) and Functional Assessment of Chronic Illness Therapy-Lymphoma (FACT-Lym) lymphoma subscale (LYMS) at both the study baseline and cycle 3 day 1 (C3D1).
- Patients were deemed to have a clinically meaningful change if they had a score change of 10 points in QLQ-C30, 3 in the LYMS subscale, and 1 in the LYMS individual items.

## Methods

### Statistical Analysis

- The PROMs were analyzed as continuous variables in the longitudinal mean score comparison between the baseline and C3D1.
- The predictive values of changes in PROMs for both PFS and OS were assessed using Cox regression models, with hazard ratios (HRs) rescaled to represent the clinically meaningful change.
- All models adjusted for the following covariates: disease risk (lower versus higher) according to the IPI (low/low-intermediate [L/LI]: 0-2; high/high-intermediate [H/HI]: 3-5) at diagnosis, cell of origin, BCL2 status, total metabolic tumor volume, and baseline PROM score.
- Data transformations and analyses were performed using R software version 3.6.3.
- Multiple testing analysis was not included for this exploratory hypothesis generating study.

Figure 1. Study Design



## Results

- Based on the results of the EORTC QLQ-C30, a 10-point increase (improvement) in emotional functioning was associated with 11% lower risk of progression (p=0.02) (**Figure 2**).
- Every 10-point increase (improvement) in emotional functioning was associated with 12% lower risk of death (p=0.04) (**Figure 3**).

- On the FACT-Lym LYMS, a 1-point increase (worsening) in lumps or swelling symptoms was associated with 27% higher risk of progression (p=0.02) (**Figure 4**) and a 29% higher risk of death (p=0.02) (**Figure 5**).
- A 1-point increase (worsening) in fever symptoms was associated with 41% higher risk of death (p=0.01) (**Figure 5**).

Figure 2. Forest Plot of Hazard Ratios for EORTC QLQ-C30 PROMs on Progression Free Survival

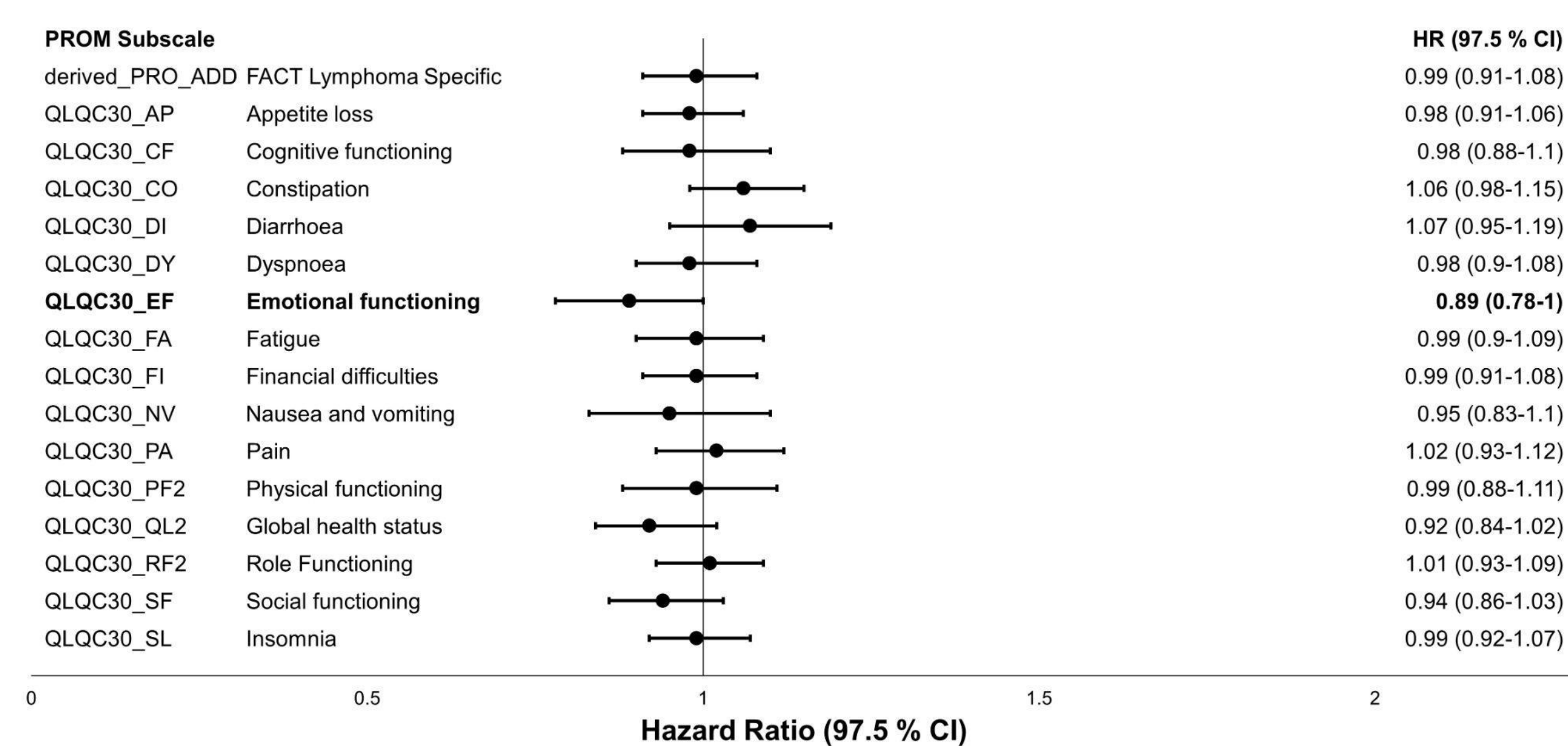


Figure 4. Forest Plot of Hazard Ratios for FACT-Lym LYMS PROMs on Progression Free Survival

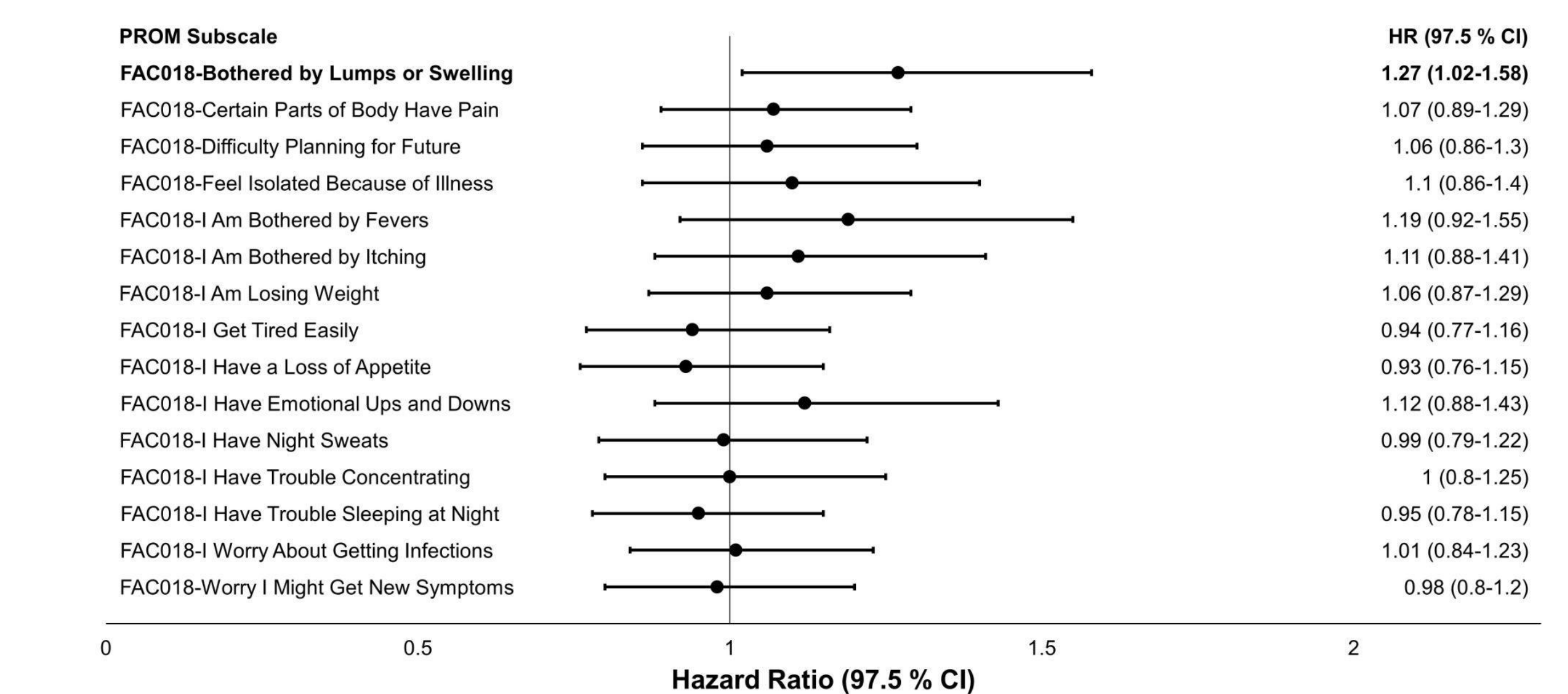


Figure 3. Forest Plot of Hazard Ratios for EORTC QLQ-C30 PROMs on Overall Survival

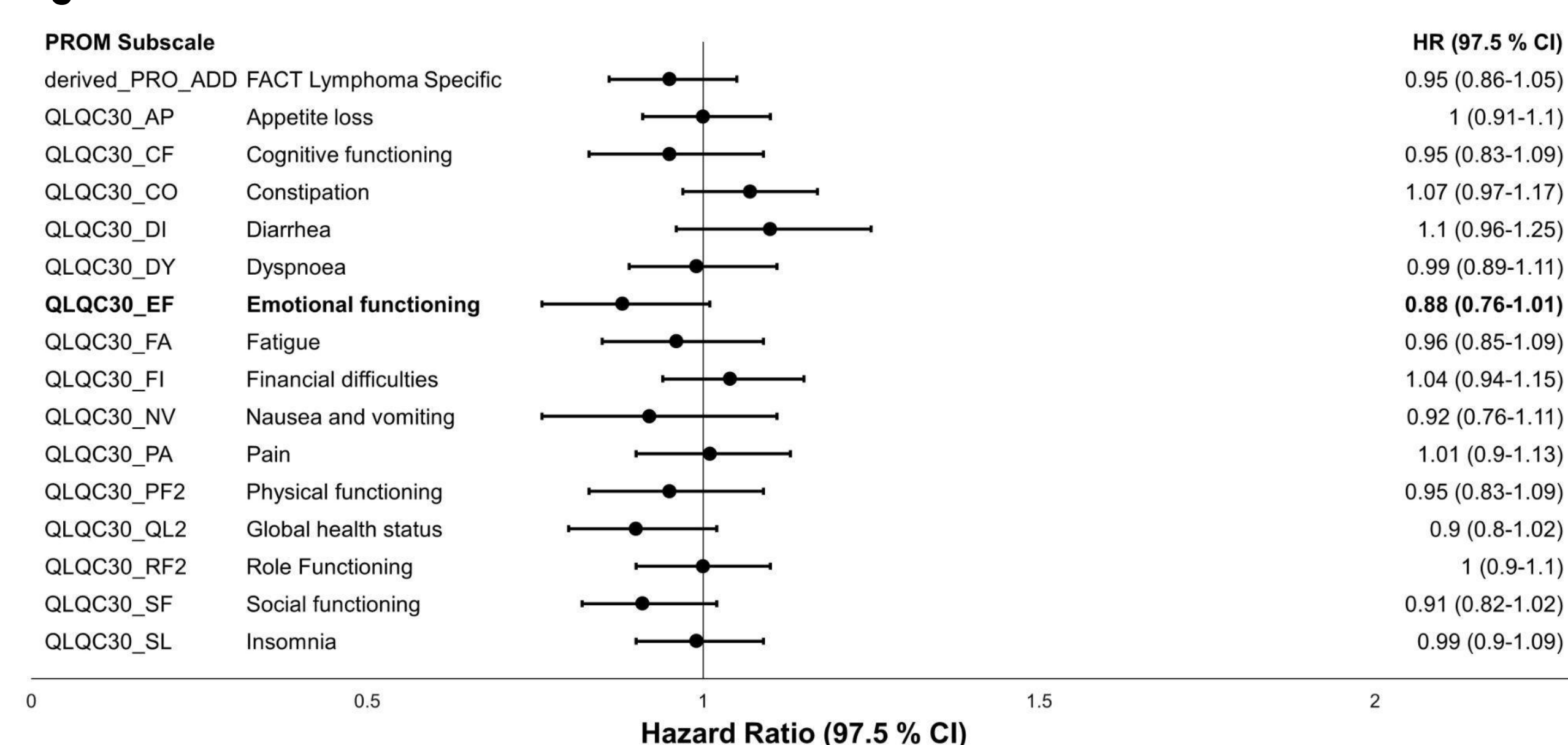
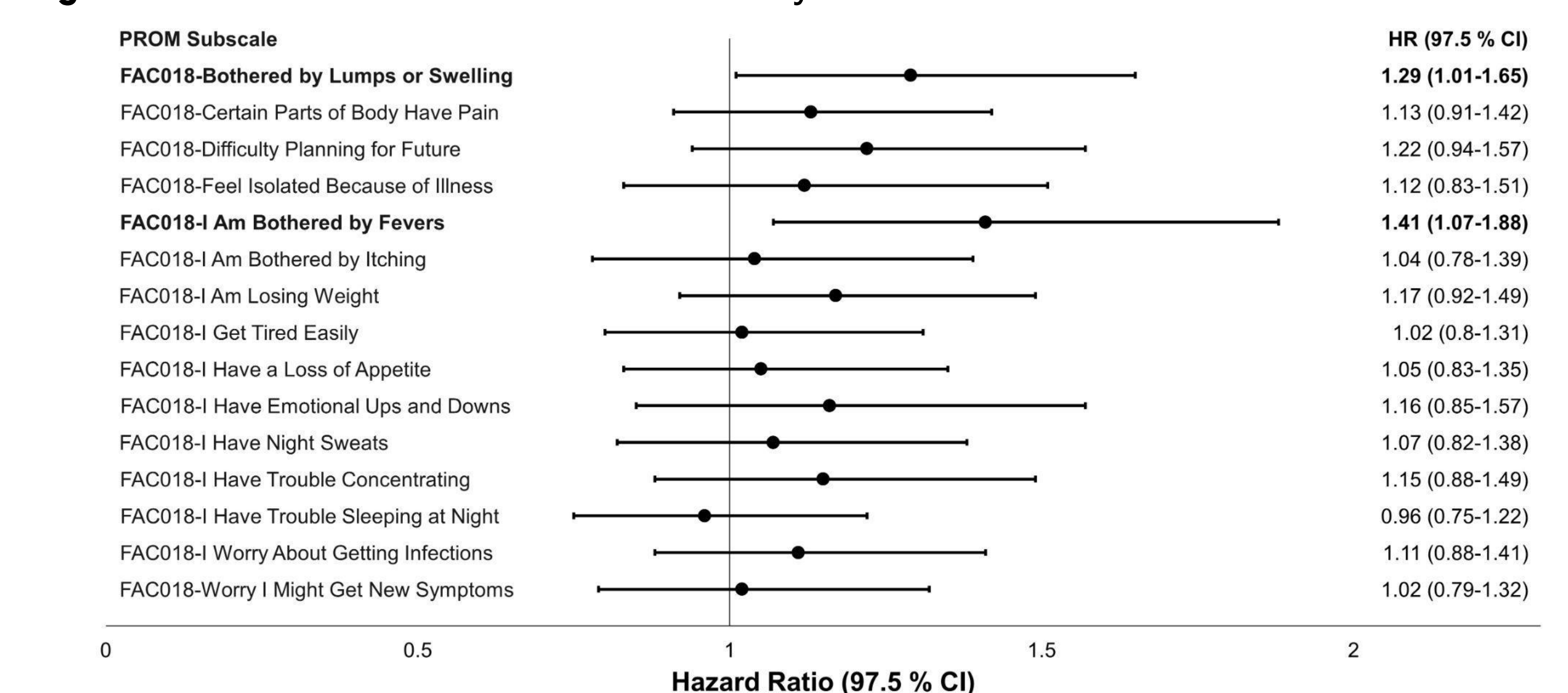


Figure 5. Forest Plot of Hazard Ratios for FACT-Lym LYMS PROMs on Overall Survival



## Conclusion

- Changes in B-cell lymphoma symptoms do not hold the same prognostic value for DLBCL survival.
  - Worsening in some B-cell lymphoma symptoms, specifically fever, lumps or swelling, was associated with an increased risk of disease progression or death.
  - No significant associations were observed between changes in other symptoms, such as itching, and survival.
- Due to the exploratory nature of the analysis, findings of the current study need to be confirmed in future research.

## References

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