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Impact of Frailty on Survivals of Prostate Cancer Patients Treated with Radiotherapy

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Background

- ◆ The biggest challenge in treating prostate cancer, a cancer most frequently occurred in older men, is to detect accompanying geriatric problems (such as frailty) in these patients.
- ◆ However, a full geriatric assessment is time-consuming and not feasible in clinical practice.

Objective

- ◆ We adopted a previously developed multimorbidity frailty index (mFI) to do risk stratification of PCa patients and to evaluate the associations between mFI and risks of all-cause mortality and cancer-specific mortality in PCa patients treated with radiotherapy (RT).

Methods

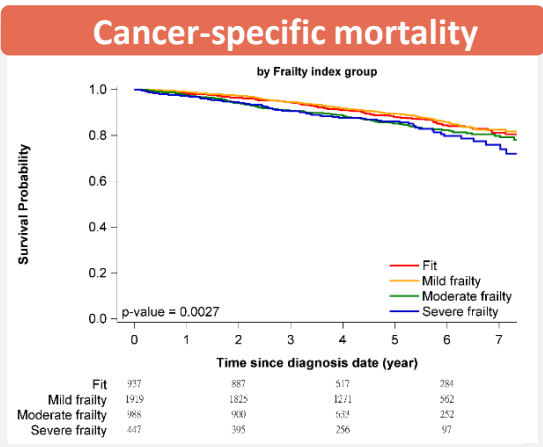
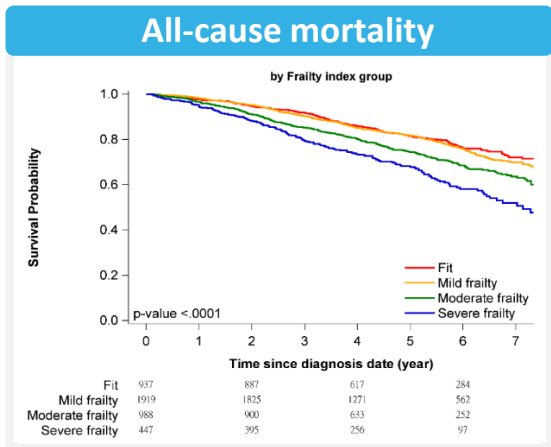
- ◆ We conducted a retrospective cohort study using the Taiwan Cancer Registry Database and National Health Insurance Research Database.
- ◆ Study population: patients aged ≥ 65 years with newly-diagnosed PCa, and receiving RT as initial treatment between 2011 and 2015.
- ◆ Frailty was measured using the multimorbidity frailty index (mFI), categorized as fit, mild frailty, moderate frailty, and severe frailty.
- ◆ Statistical analysis: Cox regression models were used to examine the association between frailty and mortality.

Results

- ◆ Among 4,291 men with a median age of 75 years at PCa diagnosis, 21.87% were categorized as fit, 44.72% were mild frailty, 23.02% were moderate frailty, and 10.42% were severe frailty.
- ◆ With the mean follow-up duration of 4.8 years, patients in the severe frailty group had a significantly higher all-cause mortality risk (HR 1.86; 95% CI, 1.48–2.32) and cancer-specific mortality risk (HR 1.44; 95% CI, 1.05–1.98) than patients in the fit group, whereas no such association was found in the mild frailty group after adjustment.

Hazard ratio of all-cause mortality and cancer-specific mortality by Cox regression model

Frailty index group	All-cause mortality		Cancer-specific mortality	
	HR	95% CI	HR	95% CI
Fit	1.00	-	1.00	-
Mild frailty	1.03	0.86-1.23	0.93	0.74-1.17
Moderate frailty	1.34	1.11-1.63	1.22	0.94-1.57
Severe frailty	1.86	1.48-2.32	1.44	1.05-1.98



Limitations

- ◆ First, we did not explore the details of RT regimen, which encompasses the total dose, fraction size, number/frequency of fractions, and types of RT.
- ◆ Second, we did not use a competing risks approach to discern and evaluate the difference between cancer- and noncancer-specific death.

Conclusions

- ◆ This is the first population-based cohort study to evaluate the feasibility of mFI on mortality of PCa patients treated with RT.
- ◆ We found that severe frailty was associated with a higher risk of both all-cause mortality and cancer-specific mortality.

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