IMPACT OF PALLIATIVE CARE CONSULTATION ON ADVANCE CARE PLANNING AND END-OF-LIFE CARE IN PATIENTS WITH ADVANCED CANCER

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BACKGROUND

- Early integration of specialty palliative care (PC) improves patient outcomes.
- PC consultation, a hospital-based form of specialty PC, supports oncologists by addressing complex needs of patients and families, following the generalist-plus-specialist model.
- This study evaluates the **impact of PC consultations** on **advance care planning** and **end-of-life healthcare utilization** in a real-world setting.

METHODS

Study Design and Population

- This retrospective cohort study analyzed adult **patients with lung, gastric, colorectal, liver, or pancreaticobiliary cancers** treated at a tertiary hospital in South Korea between 2018 and 2022 and who died until June 23, 2023.
- We constructed the study **cohort using the institutional medical records** to identify patients who received PC consultation at the hospital and **linked these records to NHIS calms data** to capture healthcare utilization beyond the hospital setting.
- Patients were categorized into **PC** and **non-PC groups** based on whether they received specialty PC consultations.

Specialty palliative care services

- Available by referrals from **outpatient clinics**, **inpatient wards** (general wards and intensive care units [ICUs]), and the **emergency department** (ED).
- Provided by an **interdisciplinary team** of physicians, nurses, and social workers (a nurse-led assessment → team discussion → physician consultation +/- social worker participation as needed)
- Involving **individualized care planning** and included **follow-up visits**
- No inpatient hospice or acute PC units at the institution.

Outcomes of interest

- **Advance care planning outcomes:** completion of an advance statement (Advance Directives or Physicians' Order for Life-Sustaining Treatment (LST)) and patient-determined decisions regarding LST
- **EOL healthcare utilization**
  - **Aggressive care**; ED visits, ICU admissions, cardiopulmonary resuscitation, mechanical ventilation, renal replacement therapy in the last month of life, and chemotherapy in the last two weeks
  - **Hospice care**; inpatient, home-based, and consultation-based services, with measures of initiation timing
- **Location of death**: proportion of each type of institution

Statistical analysis

- **Propensity score matching (1:2)** was conducted to balance baseline characteristics
- Matching variables; age (≥65 years), sex, insurance, income, residence, disability, comorbidities, time from diagnosis to death, and year of death

RESULTS

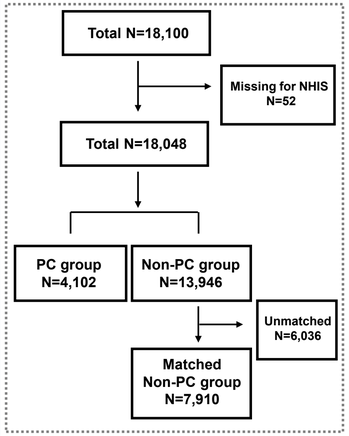

Fig 1. Study flow

Table 1. Baseline characteristics of study population after matching

	PC (N=4,102)		Matched non-PC (N=7,910)		*p* value	SMD
	n	%	n	%		
Age (year)						
Mean (SD)	66.5	11.3	68.3	12.2	<0.001	
<65	1,695	41.3	3,086	39.0	0.014	0.046
≥65	2,407	58.7	4,824	61.0		
Sex					0.268	-0.021
Male	2,619	63.8	5,131	64.9		
Female	1,483	36.2	2,779	35.1		
Insurance					0.525	-0.011
NHI	3,925	95.7	7,588	95.9		
Medical aid	177	4.3	322	4.1		
Household income					0.998	0.006
1Q (lowest)	911	22.2	1,750	22.2		
2Q	611	14.9	1,171	14.8		
3Q	845	20.6	1,636	20.7		
4Q (highest)	1,735	42.3	3,353	42.4		
Residence					0.577	0.042
Seoul	2,212	53.9	4,111	52.0		
Gyeonggi/ Incheon	985	24.0	1,977	25.0		
Gangwon	88	2.1	168	2.1		
Chungcheon	289	7.0	582	7.3		
Gyeongsang	322	7.8	672	8.6		
Jeolla	190	4.6	369	4.6		
Jeju	16	0.4	31	0.4		
Disability					0.484	0.013
No	3,593	87.6	6,893	87.1		
Yes	509	12.4	1,017	12.9		
Non-cancer CCI					0.896	0.009
0	400	9.8	795	10.1		
1	973	23.7	1,868	23.6		
2	1,042	25.4	1,969	24.9		
3 or more	1,687	41.1	3,278	41.4		
Cancer type					<0.001	0.405
Lung	1,456	35.5	1,644	20.8		
Stomach	536	13.1	975	12.3		
Colorectum	580	14.1	1,118	14.1		
Liver	531	12.9	2,012	25.4		
Pancreato-biliary	999	24.4	2,161	27.3		
Year of death					0.836	0.015
2018	549	13.4	1,092	13.8		
2019	695	16.9	1,369	17.3		
2020	765	18.6	1,511	19.1		
2021	913	22.3	1,732	21.9		
2022	1,017	24.8	1,885	23.8		
2023	163	4.0	321	4.1		
Time from diagnosis to death, days, mean (SD)	1,009.3	1,086.0	1,144.7	12.6	0.502	0.008

Table 2. Comparison of advance care planning and life-sustaining treatment decisions

	Total (N=12,012)		PC (N=4,102)		Matched Non-PC (N=7,910)		*p* value
Advance statement completion, n (%)							
No	7,094	59.1	1,723	42.0	5,371	67.9	<0.001
Yes	4,918	40.9	2,379	58.0	2,539	32.1	
AD	962	8.1	313	7.6	649	8.2	0.287
POLST	3,956	32.9	2,066	50.4	1,890	23.9	<0.001
Time from advanced statement completion to death, days, mean (SD)							
AD	435.5	490.3	448.2	472.8	429.4	498.8	0.577
POLST	49.6	103.4	58.9	99.3	39.5	106.7	<0.001
LST implementation, n (%)							
No	6,462	53.8	1,726	42.1	4,736	59.9	<0.001
Yes	5,550	46.2	2,376	57.9	3,174	40.1	
Patient-determined	3,381	60.9	1,593	67.0	1,788	56.3	<0.001
Family-determined	2,169	39.1	783	33.0	1,386	43.7	
Time from LST implementation to death, days, mean (SD)	21.4	80.0	22.0	72.9	20.9	84.9	0.598

Fig 2. Comparison of aggressive care at the end-of-life

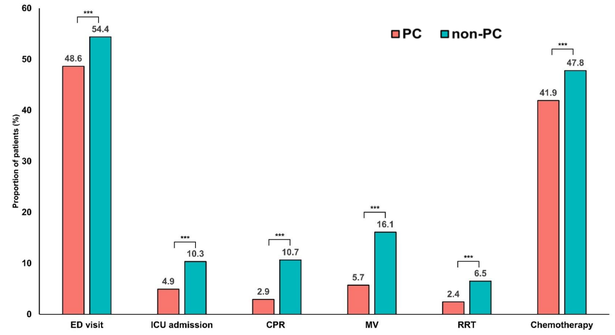

Table 3. Comparisons of hospice use between PC and non-PC groups

	Total (N=12,012)		PC (N=4,102)		Matched Non-PC (N=7,910)		*p* value
Any hospice use, n (%)	4,546	37.9	3,001	73.2	1,545	19.5	<0.001
Inpatient hospice	2,748	22.9	1,466	35.7	1,282	16.2	<0.001
Home hospice	481	4.0	294	7.2	187	2.4	<0.001
Consultation hospice	2,740	22.8	2,293	55.9	447	5.7	<0.001
Time from the first hospice utilization to death, days, mean (SD)	48.16	69.3	55.1	75.1	34.6	54.1	<0.001
Inpatient hospice	26.59	38.6	27.0	37.5	26.2	39.9	0.585
Home hospice	50.38	70.0	48.7	56.5	53.1	87.3	0.499
Consultation hospice	59.49	77.5	62.4	81.0	44.5	53.8	<0.001

Table 4. Comparisons of location of death between PC and non-PC groups

	Total (N=12,012)		PC (N=4,102)		Matched Non-PC (N=7,910)		*p* value
Tertiary hospital	4,961	41.3	1,712	41.7	3,249	41.1	0.498
Secondary hospital	4,718	39.3	1,607	39.2	3,111	39.3	0.885
Nursing care facility	1,337	11.1	363	8.9	974	12.3	<0.001
Inpatient hospice facility	2,398	20.0	1,276	31.1	1,122	14.2	<0.001
Home	35	0.23	11	0.3	24	0.3	0.899
Other	79	0.7	23	0.6	56	0.7	0.408
Death within hospital							
ICU	969	8.1	200	4.9	769	9.7	<0.001
ED	4,002	33.3	1,148	28.0	2,854	36.1	<0.001

CONCLUSION

- PC consultations improve advance care planning, reduce aggressive care, and increase hospice utilization. These findings highlight their critical role in optimizing end-of-life outcomes for patients with advanced cancer.