**Incidence and risk factors of prolonged grief in relatives of patients with terminal cancer in French palliative care units: the Fami-Life multicenter cohort study.**

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**e-Table 1**. Recruitment period

| **Centres** | **First inclusion** | **Last inclusion** | **Assessed for eligibility** | **Eligible patients** | **Included patients** | **Relatives****included** | **Relatives of alive patients** | **Relatives’ refusal**  | **Relatives lost to follow-up** | **Relatives analyzed** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2019/01/28 | 2020/01/30 | 168 | 90 | 77 | 118 | 17 | 6 | 18 | 77 |
| 2 | 2019/03/04 | 2019/03/24 | 93 | 2 | 2 | 2 | 0 | 0 | 0 | 2 |
| 3 | 2019/04/01 | 2020/01/04 | 125 | 48 | 47 | 59 | 1 | 7 | 7 | 44 |
| 4 | 2019/02/25 | 2020/01/25 | 126 | 21 | 21 | 36 | 0 | 2 | 7 | 27 |
| 5 | 2019/04/26 | 2019/07/08 | 130 | 8 | 6 | 10 | 2 | 0 | 0 | 8 |
| 6 | 2019/04/15 | 2020/02/04 | 302 | 17 | 17 | 31 | 0 | 3 | 1 | 27 |
| 7 | 2019/03/01 | 2020/01/30 | 113 | 12 | 10 | 23§ | 3 | 4 | 2 | 12 |
| 8 | 2019/03/06 | 2019/06/27 | 30 | 10 | 7 | 26|| | 9 | 0 | 4 | 12 |
| 9 | 2019/03/12 | 2019/11/22 | 123 | 19 | 18 | 26 | 1 | 1 | 2 | 22 |
| 10 | 2019/09/03 | 2020/02/06 | 226 | 68\* | 58 | 93¶ | 9 | 7 | 6 | 67 |
| 11 | 2019/02/19 | 2019/12/12 | 98 | 20 | 15 | 24 | 5 | 4 | 0 | 15 |
| 12 | 2019/03/14 | 2020/01/31 | 164 | 17 | 17 | 21 | 0 | 2 | 1 | 18 |
| 13 | 2019/02/27 | 2020/01/06 | 110 | 16 | 14 | 19 | 2 | 4 | 2 | 11 |
| 14 | 2019/04/15 | 2019/07/04 | 93 | 10 | 3 | 13 | 10 | 0 | 0 | 3 |
| 15 | 2019/03/05 | 2019/10/31 | 101 | 36 | 33 | 44 | 3 | 6 | 5 | 30 |
| 16 | 2019/04/02 | 2019/06/14 | 92 | 8 | 8 | 18 | 0 | 2 | 4 | 12 |
| 17 | 2019/03/19 | 2019/07/25 | 78 | 22 | 21 | 30 | 0 | 3 | 1 | 26 |
| 18 | 2019/03/15 | 2019/10/21 | 120 | 16 | 16 | 22 | 0 | 2 | 1 | 19 |
| 19 | 2019/02/22 | 2020/02/05 | 144 | 55† | 44 | 72 | 15 | 6 | 2 | 49 |
| 20 | 2019/03/19 | 2019/08/22 | 104 | 9 | 9 | 18 | 0 | 1 | 0 | 17 |
| 21 | 2019/03/27 | 2019/04/11 | 28 | 5 | 3 | 8 | 3 | 0 | 0 | 5 |
| 22 | 2019/01/31 | 2020/01/23 | 133 | 68 | 55 | 87 | 14 | 3 | 7 | 63 |
| 23 | 2019/05/09 | 2019/09/08 | 63 | 7 | 7 | 12 | 0 | 1 | 1 | 10 |
| 24 | 2019/06/05 | 2020/01/10 | 62 | 6 | 4 | 10 | 2 | 0 | 1 | 7 |
| 25 | 2019/04/04 | 2019/10/08 | 60 | 10 | 10 | 17 | 0 | 1 | 1 | 15 |
| 26 | 2019/07/27 | 2020/01/16 | 37 | 9 | 9 | 15 | 0 | 1 | 1 | 13 |
|  |  |  | 2923 | 609‡ | 531 | 854 | 96 | 66 | 74 | 611\*\* |

Violation protocol for patients: \* (n=3), † (n=1), ‡605 (609-4) patients were eligible

Violation protocol for relatives: § (n=2), || (n=1), ¶ (n=4). Of the 611\*\* relatives analyzed, 608 patients remained in the principal analysis due to the lack of IGC in 3 relatives.

**e-Table 2**. Characteristics of approached, excluded and eligible patients

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | **Approached****(n=609)** | **Excluded (n=78)** | **Eligible****(n=531)** | **Missing data** | **p-value** |
| Age, years, median (IQR) | 73 (66-83) | 75 (70-86) | 73 (65-82) | 2 | 0.02 |
| Female gender, % | 292 (48) | 38 (49.4) | 254 (47.8) | 2 | 0.80 |
| **Main symptoms at admission,** %  Alteration of general condition Pain Dyspnea Anxiety  Confusion Nausea, vomiting Occlusion Fever Infection Convulsions Coma Oropharyngeal congestion Diarrhea  | 458 (75.2)374 (61.4)151 (24.8)228 (37.4)196 (32.2)87 (14.3)64 (10.5)19 (3.1)47 (7.7)16 (2.6)18 (3)39 (6.4)23 (3.8) | 53 (67.9)45 (57.7)13 (16.7)22 (28.2)27 (34.6)17 (21.8)15 (19.2)4 (5.1)8 (10.3)2 (2.6)3 (3.8)6 (7.7)1 (1.3) | 405 (76.3)329 (62)138 (26)206 (38.8)169 (31.8)70 (13.2)49 (9.2)15 (2.8)39 (7.3)14 (2.6)15 (2.8)33 (6.2)22 (4.1) | 0 | 0.120.530.090.070.600.0550.010.280.3610.490.610.34 |
| **Nature of cancer,** %Digestive Pulmonary Breast Genitourinary  Brain Skin and soft tissues Hemopathy PrimaryPresence of metastasis | 206 (33.8)140 (23)42 (6.9)109 (17.9)34 (5.6)49 (8)14 (2.3)10 (1.6)491 (81.2) | 24 (30.815 (19.2)5 (6.4)18 (23.1)5 (6.4)5 (6.4)078 (1.3)74 (4) | 182 (34.3)125 (23.5)37 (7)91 (17.1)29 (5.5)44 (8.3)14 (2.6)9 (1.7)434 (81.7) | 0 | 0.600.4710.200.790.820.2310.34 |
| **Underlying diseases,** % COPD Cardiac Renal Hepatic Neurologic | 98 (16.1)186 (30.5)54 (8.9)29 (4.8)53 (8.7) | 12 (15.4)28 (35.9)6 (7.7)4 (5.1)9 (11.5) | 86 (32.2)158 (59.2)48 (18)25 (9.4)44 (16.5) | 0 | 10.290.830.770.38 |
| **Previous place of life before admission,** % Home Nursing home Acute hospital Oncological follow-up care services Geriatric follow-up care services Neurological follow-up care services | 183 (30)13 (2.1)359 (58.9)10 (1.6)1 (0.2)21 (3.4) | 26 (33.3)2 (2.6)47 (60.3)001 (1.3) | 157 (29.6)11 (2.1)329 (62)20 (3.8)13 (2.4)1 (0.2) | 0 | 0.500.670.900.6210.50 |
| Duration of palliative care stay, days, Median (IQR) | 12 (7-21)  | 13 (3-22) | 12 ([7-21) | 2 | 0.17 |
| Time interval between cancer diagnosis and admission, years, median (IQR) | 2 (2-4) | 3 (2-4) | 2 (1-4) | 8 | 0.37 |
| Decedents at palliative care discharge, % | 560 (92.1) | 29 (37.7) | 531 (100) | 0 | <.0001 |
| Death after CDS, % | 43 (7.7) | 0 | 43 (8.1) | 98 | 0.15 |
| Request of euthanasia by the patient, % | 54 (8.9) | 2 (2.6) | 52 (9.8) | 2 | 0.03 |
| Request of euthanasia by the family % | 16 (2.6) | 1 (1.3) | 15 (2.8) | 2 | 0.70 |
| Presence of a surrogate at admission, % | 421 (69.2) | 52 (67.5) | 369 (69.5) | 2 | 0.79 |
| Presence of advance directives, % | 56 (9.2) | 7 (9.1) | 49 (9.2) | 2 | 1 |

IQR=Inter Quartile Range; COPD=Chronic Obstructive Pulmonary Disease; CDS=Continuous Deep Sedation

**e-Table 3**. Characteristics of approached, excluded and eligible relatives

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | Relatives approached(n=854) | RelativesExcluded (n=243) | Relatives eligible(n=611) | Missing data | p-value |
| Demographics |  |  |  |  |  |
|  Age, median (IQR), y | 58 (46-68) | 61 (48-70) | 57 (45-67) | 94 | 0.008 |
|  Women gender, % | 602 (70.6) | 164 (67.8) | 438 (71.7) | 2 | 0.28 |
| Relationship with the patient, % |  |  |  | 172 | 0.31 |
|  Spouse/partner Children Parents Other | 277 (36.1)392 (51)21 (2.7)78 (10.2) | 76 (34.7)107 (48.9)7 (3.2)29 (13.2) | 201 (36.6)285 (51.9)14 (2.6)49 (8.9) |  |  |
| Occupation\*, % Primary Secondary Tertiary None | 6 (1.4)19 (4.3)388 (88)28 (6.3) | 1 (0.9)6 (5.5)99 (90)4 (3.6) | 5 (1.5)13 (3.9)289 (87.3)24 (7.3) | 14 | 0.51 |
| Retired, % | 330 (81.5) | 107 (81.7) | 223 (81.4) | 0 | 1 |
| Educational level, % Upper secondary education High school Technical college Associate degree Bachelor degree Master degree | 79 (9.6)128 (14.6)75 (9.1)141 (17.2)179 (21.8)218 (26.6) | 29 (12.9)40 (17.9)26 (11.6)44 (19.6)39 (17.4)46 (20.5) | 50 (8.4)88 (14.8)49 (8.2)97 (16.3)140 (23.5)179 (28.9) | 68 | 0.01 |
| Previous palliative care hospitalization for a closer relative, % | 184 (21.6) | 53 (21.9) | 131 (21.4) | 2 | 0.92 |
| Patient’s surrogate, % | 490 (57.4) | 144 (59.3) | 346 (56.6) | 0 | 0.49 |
| Primary caregiver, % | 528 (61.9) | 152 (62.8) | 376 (61.5) | 2 | 0.75 |
| Presence at home, %  Health-care worker Life support person | 423 (49.5)119 (13.9) | 115 (47.3)37 (15.2) | 308 (50.4)82 (13.4) | 00 | 0.450.51 |

IQR=Inter Quartile Range

\*Occupations were grouped onto agricultural (primary), industrial (secondary) or commercial or related to administration or human health or public action (tertiary)

**e-Table 4.** Univariable analysis of prolonged grief in relatives**.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **ICG ≤ 25****N=409** | **ICG > 25****N=199** | **OR (95% CI)** | **p-value** |
| **CENTER** |
| Hospital, % Private University General | 212 (51.8)81 (19.8)116 (28.4) | 79 (39.7)52 (26.1)68 (34.2) | 11.29 (0.55-2.99)1.3 (0.51-3.34) | 0.77 |
| Number of beds > 15, % | 231 (56.5) | 77 (38.7) | 0.49 (0.25-0.98) | 0.046 |
| Number of senior physicians, % | 2 (2-3) | 2 (1-3) | 0.91 (0.71-1.18) | 0.44 |
| Number of junior physicians, % | 0 (0-1) | 0 (0-1) | 0.82 (0.48-1.4) | 0.45 |
| Patient-to-nurse ratio, day, median (IQR) | 5 (4-6) | 5 (4-6) | 1.15 (0.89-1.48) | 0.25 |
| Patient-to-nursing assistant ratio, day, median, (IQR) | 6 (5-8) | 5 (4-6) | 0.98 (0.91-1.05) | 0.55 |
| Presence of support group for family, % | 96 (23.5) | 55 (27.6) | 1.67 (0.8-3.51) | 0.16 |
| 24-hr visitation policies, % | 183 (44.7) | 121 (60.8) | 1.87 (0.9-3.88) | 0.08 |
| Family on site sleep, % Dedicated room available Bed into the patient room Armchair into the patient room | 223 (54.5)405 (99)308 (75.3) | 77 (38.7)191 (96)164 (82.4) | 0.55 (0.31-0.97)0.32 (0.08-1.29)1.18 (0.42-3.28) | 0.040.110.72 |
| Pet visitation, %  | 309 (75.6) | 136 (68.3) | 0.87 (0.43-1.76) | 0.68 |
| Presence of a support group for relatives during the stay, % | 10 (2.4) | 15 (7.5) | 2.82 (1-7.92) | 0.05 |
| Participation of relatives into care, % | 275 (67.2) | 144 (72.4) | 1.02 (0.49-2.14) | 0.94 |
| Information procedures, % Formal meeting at admission with a nurse with a psychologist Weekly meeting Formal meeting after patient ‘death | 398 (97.3)119 (29.1)342 (83.6)169 (41.3) | 191 (96)60 (30.2)163 (81.9)108 (54.3) | 1.52 (0.4-5.78)1.19 (0.63-2.27)1.24 (0.55-2.82)1.81 (1.02-3.22) | 0.530.580.590.04 |
| Hours of availability of the mortuary chamber, median, (IQR) | 8 (5-9) | 8 (5-9) | 1.02 (0.93-1.12) | 0.63 |
| Relatives authorized to prepare the body for funerals\*, % | 383 (93.6) | 168 (84.4) | 0.44 (0.2-0.96) | 0.04 |
| Mourning follow-up, % Sending a condolence letter Proposition of a follow-up with a psychologist Proposition of a follow-up with volunteers Presence a support grieving group Another follow-up | 153 (37.4)226 (70.2)30 (9.3)92 (22.5)66 (20.5) | 92 (46.2)135 (76.3)14 (7.9)53 (26.6)28 (15.8) | 1.1.29 (0.57-2.94)08 (0.58-2.01)0.85 (0.15-4.97)1.71 (0.81-3.61)0.77 (0.32-1.9) | 0.790.500.820.150.55 |
| Delivery of a leaflet for children, % | 155 (37.9) | 58 (29.1) | 0.82 (0.4-1.69) | 0.58 |
| Delivery of an information leaflet at patient’ death, % | 272 (66.5) | 154 (77.4) | 1.8 (0.89-3.62) | 0.09 |
|  |  |  |  |  |
| **PATIENTS** |
| Gender, % Female Male | 205 (50.1)204 (49.9) | 86 (43.2)113 (56.8 | 11.29 (0.89-1.87) | 0.18 |
| Age, years | 75 (66-83) | 68 (6.-76) | 0.96 (0.95-0.98) | <.001 |
| Time interval between the diagnosis of the cancer and the Palliative Care unit admission, years, median (IQR) | 3 (1-5) | 2 (1-4) | 0.97 (0.92-1.02) | 0.2 |
| Type of cancer, % Digestif Genito-urinary Lung Primary Breast Hemopathy Skin and soft tissues Brain | 152 (37.2)91 (22.2)26 (6.4)73 (17.8)18 (4.4)30 (7.3)11 (2.7)8 (2) | 58 (29.1)47 (23.6)14 (7)30 (15.1)19 (9.5)21 (10.6)6 (3)4 (2) | 11.16 (0.65-20.7)1.31 (0.79-2.18)1.4 (0.35-5.63)1.45 (0.66-3.15)1.48 (0.47-4.66)1.79 (0.89-3.59)2.73 (1.21-6.17) | 0.36 |
| Admission symptoms, % Respiratory Pain Sepsis Digestive Anxiety/psychology suffering Neurologic | 113 (27.6)251 (61.4)39 (9.5)102 (24.9)148 (36.2)143 (35) | 76 (38.2)126 (63.3)17 (8.5)33 (16.6)88 (44.2)76 (38.2) | 1.77 (1.19-2.64)1.17 (0.79-1.73)0.85 (0.44-1.65)0.64 (0.4-1.03)1.5 (1-2.23)1.13 (0.76-1.66) | 0.0050.430.630.060.040.54 |
| Comorbid conditions, % Respiratory Cardiac Renal Hepatic Neurologic | 61 (29.2)129 (61.7)34 (16.3)25 (12)37 (17.7) | 34 (38.6)48 (54.5)20 (22.7)9 (10.2)9 (10.2) | 1.52 (0.86-2.67)0.66 (0.38-1.16)1.49 (0.76-2.91)0.82 (1.35-1.95)0.52 (0.23-1.17) | 0.150.250.650.110.79 |
| Origin, % Follow-up care services Home Acute care hospital | 136 (33.3)225 (55)48 (11.7) | 56 (38.1)118 (59.3)25 (12.6) | 10.62 (0.32-1.2)0.95 (0.51-1.75) | 0.12 |
| Patient status, % Single | 196 (47.9) | 68 (34.2) | 0.57 (0.39-0.85) | 0.005 |
| Time interval between admission and death, days, median (IQR) | 12 (7-20) | 13 (8-20) | 1 (0.98-1.02) | 0.89 |
| Death after continuous deep sedation, %  | 24 (8.1) | 15 (10) | 1.07 (0.52-2.2) | 0.87 |
| Request of euthanasia by patient or family member, %  | 49 (12) | 21 (10.6) | 0.83 (0.45-1.52) | 0.54 |
| Patient’s surrogate, % | 279 (68.2) | 147 (73.9) | 1.48 (0.96-2.27) | 0.07 |
| Presence of advanced directives, % | 43 (10.5) | 16 (8) | 0.82 (0.55-1.46) | 0.65 |
|  |  |  |  |  |
| **RELATIVES** |
| Gender, % Male Female | 129 (31.5)280 (68.5) | 44 (22.1)155 (77.9) | 11.56 (1.03-2.38) | 0.04 |
| Age, years, median (IQR) | 57 (46-67) | 57 (42-67) | 1 (0.99-1.01) | 0.82 |
| Relationship with the patient, % Spouse/partner Children Parents Other | 110 (30.6)209 (58.1)5 (1.4)36 (10) | 89 (47.8)89 (47.8)9 (4.8)13 (7) | 10.44 (0.29-0.65)1.96 (0.59-6.57)0.46 (0.22 -0.95) | 0.001 |
| Level of education equal or superior to bachelor, % | 238 (58.2) | 87 (43.7) | 0.6 0.41-0.87) | 0.008 |
| Previous palliative care hospitalization for a close relative, %  | 89 (21.8) | 41 (20.6) | 0.95 (0.61-1.48) | 0.81 |
| Palliative care admission requested by relatives, % | 261 (63.8) | 134 (67.3) | 1.33 (0.9-1.98) | 0.15 |
| Occupation\*\*, %None PrimarySecondaryTertiary | 16 (6.9)4 (1.7)7 (3)204 (88.3) | 8 (8.1)1 (1)6 (6.1)84 (84.4) | 10.47 (0.04-5.68)1.18 (0.26-5.33)0.88 (0.34-2.26) | 0.98 |
| Retired, % | 143 (82.7) | 79 (79.8) | 0.85 (0.44-1.67) | 0.65 |
| Patient’s surrogate, % | 216 (52.8) | 135 (67.8) | 1.75 (1.2-2.54) | 0.004 |
| Primary caregiver, % | 238 (58.2) | 135 (67.8) | 1.62 (1.11-2.38) | 0.01 |
| Presence at home, %  Health-care worker Life support person | 208 (50.9)65 (15.9) | 98 (49.2)17 (8.5) | 0.84 (0.58-1.23)0.51 (0.28-0.93) | 0.370.02 |
| Interview conducted during the lockdown (2020/15/03-2020/11/06) | 111 (27.1) | 36 (18.1) | 0.59 (0.37-0.95) | 0.03 |
| Between day3-day5 HADS score, median (IQR) HAS score, median (IQR) HAD score, median (IQR)Symptoms of anxiety, % YesSymptoms of depression, % Yes | 15 (10-20)9 (7-12)6 (3-9)220 (57)113 (29.3) | 21 (16-26)12 (10-16)9 (6-12)158 (81.4)100 (51.5) | 1.12 (1.08-1.15)1.2 (1.14-1.26)1.17 (1.11-1.23)3.19 (2.06-4.94)2.53 (1.72-3.71) | <.001<.001<.001<.001<.001 |

ICG=Inventory complicated grief; OR=Odds Ratio; CI= Confidence Interval; HADS=Hospital Anxiety and Depression Score; HAS=Hospital Anxiety Score; HAD=Hospital Depression Score; IQR=Inter Quartile Range

\* The body preparation for funerals is done by the relatives immediately after death with nurses and nursing assistants (washing and dressing the body for funerals, and having the possibility to practice religious rite)

\*\*Sectors of activities are either agricultural (primary), industrial (secondary) or commercial or related to administration or human health or public action (tertiary)

**e-Table 5.** Univariable analysis of post-traumatic stress disorders in relatives.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **IES-R** **≤22** | **IES-R** **> 22** | **OR (95% CI)** | **p-value** |
| **CENTERS** |
| Hospital, % Private University General | 141 (49.6)65 (22.9)78 (27.5) | 148 (45.8)68 (21.1)107 (33.1) | 10.99 (0.47-2.09)1.29 (0.68-2.43) | 0.59 |
| Number of beds > 15, median (IQR) | 156 (54.9)) | 150 (46.5) | 0.64 (1.37-1.12) | 0.10 |
| Number of senior physicians, % | 2 (2-3) | 2 (1.6-3) | 0.95 (0.79-1.15) | 0.57 |
| Number of junior physicians, % | 0 (0-1) | 0 (0-1) | 1.03 (0.67-1.58) | 0.88 |
| Patient-to-nurse ratio, day, median (IQR) | 4.7 (4-5) | 5 (4-6) | 1.18 (0.98-1.42) | 0.07 |
| Patient-to-nursing assistant ratio, day, median (IQR) | 6 (5-7.8) | 6 (5-7) | 1.05 (0.91-1.21) | 0.46 |
| Presence of support group for families, (%) | 55 (25.3) | 95 (26.2) | 1.05 (0.71-1.55) | 0.814 |
| 24-hr visitation policies, % | 130 (45.8) | 175 (54.2) | 1.55 (0.88-2.73)) | 0.10 |
| Family on site sleep, % Dedicated room available Bed into the patient room Armchair into the patient room | 159 (56)278 (97.9)223 (78.5) | 141 (43.7)317 (98.1)248 (76.8) | 0.6 (0.42-0.85)1.11 (0.3-4.09)0.93 (0.43-2) | 0.0040.870.82 |
| Pet visitation, %  | 213 (75) | 231 (71.5) | 0.82 (0.47-1.45) | 0.47 |
| Presence of a support group for relatives during the stay, % | 64 (22.5) | 86 (26.6) | 1.37 (0.75-2.53) | 0.28 |
| Participation of relatives into care, % | 204 (71.8) | 215 (66.6) | 0.8 (0.44-1.44) | 0.41 |
| Information procedures, % Formal meeting at admission with a nurse with a psychologist Weekly meeting Formal meeting after patient ‘death | 277 (97.5)86 (30.3)234 (82.4)115 (40.5) | 311 (96.3)94 (29.1)270 (83.6)161 (49.8) | 0.78 (0.25-2.43)0.99 (0.59-1.65)1.16 (0.59-2.3)1.5 (0.94-2.38) | 0.660.950.640.08 |
| Hours of availability of the mortuary chamber, median (IQR) | 8 (5-9) | 8 (5-9) | 1 (0.93-1.08) | 0.89 |
| Relatives authorized to prepare the body for funerals\*, (%) | 268 (94.4) | 282 (87.3) | 0.43 (0.22-0.85) | 0.017 |
| Mourning follow-up, % Sending a condolence letter Proposition of a follow-up with a psychologist Proposition of a follow-up with volunteers Presence a support grieving group Another follow-up | 105 (37)156 (67.8)24 (10.4)66 (23.2)50 (21.7) | 140 (43.3)205 (76.5)20 (7.5)78 (24.1)43 (16) | 1.34 (0.75-2.39)1.47 (0.74-2.92)0.65 (0.16-2.54)1.04 (0.56-1.93)0.75 (0.35-1.62) | 0.280.230.460.890.23 |
| Delivery of a leaflet for children, % | 111 (39.1) | 101 (31.3) | 0.7 (0.4-1.23) | 0.17 |
| Delivery of an information leaflet at patient’ death, % | 190 (66.9) | 235 (72.8) | 1.34 (0.75-2.39) | 0.28 |
| **PATIENTS** |
|  | **N=284** | **N=323** |  |  |
| Gender, % Female Male | 140 (49.3)144 (50.7) | 150 (46.5)173 (53.6) | 11.11 (0.78-1.56) | 0.56 |
| Age, years, median (IQR) | 76 (66-85) | 69 (61-79) | 0.97 (0.95-0.98) | <.001 |
| Time interval between the cancer diagnosis and the Palliative Care unit admission, years, median, (IQR) | 2 (1-2) | 3 (1-4) | 0.98 (0.93-1.02) | 0.31 |
| Type of cancer, % Digestif Genito-urinary Lung Primary Breast Hemopathy Skin and soft tissues Brain | 110 (38.7)44 (15.5)62 (21.8)6 (2.1)18 (6.3)10 (3.5)24 (8.5)10 (3.5) | 100 (31)59 (18.3)75 (23.2)6 (1.9)22 (6.8)6 (1.9)28 (8.7)27 (8.4) | 11.58 (0.95-2.65)1.37 (0.86-2.18)1.08 (0.3-3.85)1.44 (0.7-2.96)0.76 (0.25-2.33)1.33 (0.7-2.56)2.84 (1.24-6.51) | 0.25 |
| Admission symptoms, % Respiratory Pain Sepsis Digestive Anxiety/psychology suffering Neurologic | 77 (27.1)168 (59.2)29 (10.2)75 (26.4)91 (32)96 (33.8) | 111 (34.4)210 (65)28 (8.7)60 (18.6)145 (44.9)122 (37.8) | 1.41 (0.96-2.05)1.35 (0.94-1.94)0.78 (0.43-1.42)0.62 (0.41-0.95)1.7 (1.18-2.45)1.2 (0.83-1.71) | 0.080.100.410.030.0040.33 |
| Comorbid conditions, % Respiratory Cardiac Renal Hepatic Neurologic | 42 (29.2)94 (65.3)28 (19.4)16 (11.1)18 (12.5) | 53 (35.1)83 (55)26 (17.2)18 (11.9)26 (17.2) | 1.3 (0.77-2.2)0.65 (0.4-1.08)0.83 (0.44-1.57)1.11 (0.51-2.41)1.42 (0.71-2.82) | 0.320.090.570.780.31 |
| Origin, % Follow-up care services Home Acute care hospital | 32 (11.3)95 (33.5)157 (55.3) | 41 (12.7)98 (30.3)184 (57) | 10.71 (0.39-1.3)0.84 (0.47-1.49) | 0.47 |
| Patient status, % Single | 138 (48.6) | 126 (39) | 0.68 (0.48-0.96) | 0.03 |
| Time interval between admission and death, days, median (IQR) | 11.5 (7-19) | 12 (7-19) | 1 (0.98-1.01) | 0.63 |
| Death after continuous deep sedation, %  | 20 (7) | 31 (9.6) | 1.3 (0.68-2.48) | 0.42 |
| Request of euthanasia by patient or family member, %  | 38 (13.4) | 32 (9.9) | 0.73 (0.43-1.27) | 0.26 |
| Patient’s surrogate, % | 185 (65.1) | 241 (74.6) | 1.66 (1.13-2.44) | 0.01 |
| Presence of advanced directives, % | 32 (11.3) | 27 (8.4) | 0.75 (0.42-1.35) | 0.34 |
|  |  |  |  |  |
| **RELATIVES** |
|  | **N=284** | **N=323** |  |  |
| Gender, % Male Female | 108 (38)176 (62) | 65 (20.1)258 (79.9) | 12.46 (1.68-3.61) | <.001 |
| Age, years, median (IQR) | 57 (47-67) | 57 (41-67) | 0.99 (0.98-1) | 0.12 |
| Relationship with the patient, % Spouse/partner Children Parents Other | 70 (29)141 (58.5)5 (2.1)25 (10.4) | 129 (42.4)142 (46.7)9 (3)24 (7.9) | 10.54 (0.37-0.8)0.96 (0.29-3.17)0.52 (0.27-1) | 0.014 |
| Level of education equal or superior to bachelor, % | 165 (58.1) | 160 (49.5) | 0.73 (0.52-1.03) | 0.075 |
| Previous palliative care hospitalization for a close relative, %  | 59 (20.8) | 72 (22.3) | 1.07 (0.71-1.61) | 0.73 |
| Palliative care unit admission requested by relatives, % | 179 (63) | 215 (66.6) | 1.23 (0.86-1.75) | 0.26 |
| Occupation\*\*, %None PrimarySecondaryTertiary | 9 (5.7)2 (1.3)6 (3.8)142 (89.3) | 15 (8.8)3 (1.8)7 (4.1)146 (85.4) | 1 0.87 (0.11-6.8)0.61 (0.14-2.59)0.6 (0.25-1.48) | 0.713 |
| Retired, % | 105 (87.5) | 116 (76.8) | 0.47 (0.23-0.93) | 0.03 |
| Patient’s surrogate, % | 147 (51.8) | 196 (60.7) | 1.48 (1.05-2.08) | 0.02 |
| Primary caregiver, % | 163 (57.4) | 210 (65) | 1.44 (1.02-2.04) | 0.04 |
| Presence at home, %  Health-care worker Life support person | 146 (51.4)42 (14.8) | 159 (49.2)39 (12.1) | 0.89 (0.63-1.26)0.79 (0.48-1.3) | 0.510.35 |
| Interview conducted during the lockdown (2020/15/03-2020/11/06) | 74 (26.1) | 72 (22.3) | 0.79 (0.52-1.2) | 0.27 |
| Between day3-day5 HADS score, median (IQR) HAS score, median (IQR) HAD score, median (IQR)Symptoms of anxiety, % YesSymptoms of depression, % Yes | 14 (9-20)8 (6-11)5 (3-9)134 (49.6)70 (25.9) | 20 (14-25)12 (9-15)8 (5-11)244 (78.7)143 (46.1) | 1.13 (1.1-1.16)1.23 (0.18-1.3)1.17 (1.11-1.22)3.67 (2.51-5.35)2.38 (1.64-3.44) | <.001<.001<.001<.001<.001 |

IES-R=Impact of Event Scale-Revised, OR=Odds Ratio; CI=Confidence Interval; HADS=Hospital Anxiety and Depression Score; HAS=Hospital Anxiety Score; HAD=Hospital Depression Score, IQR=Inter Quartile Range

\*The body preparation for funerals is performed by the relatives immediately after death, with nurses and nursing assistants (washing the body, dressing the deceased and having the possibility to practice religious rite)

\*\*Sectors of activities are either agricultural (primary), industrial (secondary) or commercial or related to administration or human health or public action (tertiary)

**e-Table 6**. Univariate analysis of improvement of HADS score between J3-J5 after admission and 6 months after patient’s death.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **No improvement of HADS score** **N=217** | **Improvement of HADS score****N=362** | **OR (95% CI)** | **p-value** |
| **CENTERS** |
| Hospital, % Private University General | 103 (47.5)49 (22.6)65 (30) | 173 (47.8)81 (22.4)108 (29.8) | 10.98 (0.63-1.52)1 (0.67-1.49) | 0.99 |
| Number of beds > 15, % |  |  |  |  |
| Number of senior physicians, % | 2 (2-3) | 2 (1.6-3) | 1 (0.89-1.12) | 0.96 |
| Number of junior physicians, % | 0 (0-1) | 0 (0-1) | 1 (0.72-1.37) | 0.97 |
| Patient-to-nurse ratio, day, median (IQR) | 5(4-6) | 5 (4-6) | 1.06 (0.93-1.2) | 0.40 |
| Patient-to-nursing assistant ratio, day, median (IQR) | 6 (5-7.5) | 6 (5-7) | 0.99 (0.91-1.08) | 0.87 |
| Presence of support group for families, n (%) | 64 (22.5) | 86 (26.6) | 1.37 (0.75-2.53) | 0.28 |
| 24-hr visitation policies, % | 24 (12 ; 24) | 24 (12 ; 24) | 1.01 (0.98-1.03) | 0.56 |
| Family on site sleep, % Dedicated room available Bed into the patient room Armchair into the patient room | 111 (51.2)212 (97.7)163 (75.1) | 168 (46.4)355 (98.1)284 (78.5) | 0.82 (0.58-1.16)1.23 (0.37-4.09)1.21 (0.81-1.82) | 0.270.730.35 |
| Pet visitation, % | 155 (71.4) | 266 (73.5) | 1.11 (0.75-1.63) | 0.60 |
| Presence of a support group for relatives during the stay, % | 55 (25.3) | 95 (26.2) | 1.05 (0.71-1.55) | 0.81 |
| Participation of relatives into care, % | 150 (69.1) | 247 (68.2) | 0.95 (0.65-1.38) | 0.78 |
| Information procedures, % Formal meeting at admission with a nurse with a psychologist Weekly meeting Formal meeting after patient ‘death | 211 (97.2)65 (30)181 (83.4)94 (43.3) | 349 (96.4)103 (28.5)299 (82.6)175 (48.3) | 0.76 (0.27-2.12)0.93 (0.64-1.36)0.94 (0.59-1.49)1.33 (0.88-1.99) | 0.600.700.770.25 |
| Hours of availability of the mortuary chamber, median (IQR) | 8 (5-9) | 8 (5-9) | 1.02 (0.97-1.08) | 0.48 |
| Relatives authorized to prepare the body for funerals\*, n (%) | 195 (89.9) | 328 (90.6)  | 1.08 (0.6-1.93) | 0.81 |
| Mourning follow-up, % Sending a condolence letter Proposition of a follow-up with a psychologist Proposition of a follow-up with volunteers Presence a support grieving group Another follow-up | 83 (38.2)128 (74)15 (8.7)47 (21.7)30 (17.3) | 150 (41.4)220 (72.8)29 (9.6)97 (26.8)53 (17.5) | 1.14 (0.8-1.63)0.95 (0.61-1.47)1.1 (0.56-2.17)1.33 (0.88-1.99)1.01 (0.61-1.68) | 0.450.810.770.170.96 |
| Delivery of a leaflet for children, % | 77 (35.5) | 120 (33.1) | 0.89 (0.62-1.28) | 0.54 |
| Delivery of an information leaflet at patient’ death, % | 151 (69.6) | 261 (72.1) | 1.13 (0.78-1.65) | 0.52 |
|  |  |  |  |  |
| **PATIENTS** |
|  |  |  |  |  |
| Gender, % Female Male | 106 (48.8)111 (51.2) | 167 (46.1)195 (53.9) | 1 1.12 (0.79-1.58) | 0.52 |
| Age, years, median (IQR) | 73 (64-82) | 71 (64-81) | 0.99 (0.98-1) | 0.11 |
| Time interval between the cancer diagnosis and the Palliative Care unit admission, years, median (IQR) | 2 (1-4) | 2 (1-5) | 1.03 (0.98-1.08) | 0.23 |
| Type of cancer, % Digestif Genito-urinary Lung Primary Breast Hemopathy Skin and soft tissues Brain | 78 (35.9)44 (20.3)45 (20.7)5 (2.3)11 (5.1)5 (2.3)19 (8.8) 10 (4.6) | 124 (34.3)50 (13.8)89 (24.6)7 (1.9)25 (6.9)10 (2.8)31 (8.6)26 (7.2) | 10.72 (0.43-1.2)1.24 (0.78-1.98)0.88 (0.26-3)1.43 (0.66-3.12)1.27 (0.41-3.95)1.02 (0.53-1.96)1.63 (0.73-3.64) | 0.50 |
| Admission symptoms, % Respiratory Pain Sepsis Digestive Anxiety/psychology suffering Neurologic | 67 (30.9)138 (63.6)19 (8.8)49 (22.6)69 (31.8)82 (37.8) | 112 (30.9)222 (61.3)34 (9.4)78 (21.5)156 (43.1)126 (43.1) | 1.01 (0.69-1.46)0.91 (0.64-1.3)1.08 (0.59-1.97)0.94 (0.62-1.42)1.62 (1.13-2.32)0.88 (0.61-1.26) | 0.970.590.800.770.0090.47 |
| Comorbid conditions, % Respiratory Cardiac Renal Hepatic Neurologic | 41 (37.6)65 (59.6)16 (14.7)12 (11)16 (14.7) | 53 (30.3)108 (61.7)34 (19.4)20 (11.4)27 (15.4) | 0.72 (0.03-18.92)1.09 (0.05-26))1.4 (0.01-94.3)1.04 (0.01-143.2)1.06 (0.01-81.9) | 0.420.780.490.930.89 |
| Origin, % Follow-up care services Home Acute care hospital | 22 (10.1)64 (29.5131 (60.4) | 45 (12.4)119 (32.9)198 (54.7) | 10.89 (0.48-1.63)0.72 (0.41-1.29) | 0.39 |
| Patient status, % Single | 98 (45.2) | 149 (41.2) | 0.85 (0.6-1.2) | 0.35 |
| Time interval between admission and death, days, median (IQR) | 11 (7-20) | 12 (7-20) | 0.99 (0.98-1.01) | 0.40 |
| Death after continuous deep sedation, %  | 17 (7.8) | 34 (9.4) | 1.23 (0.66-2.3) | 0.51 |
| Request of euthanasia by patient or family member, %  | 23 (10.6) | 43 (11.9) | 1.13 (0.65-1.97) | 0.65 |
| Patient’s surrogate, % | 150 (69.1) | 257 (71) | 1.1 (0.75-1.6) | 0.62 |
| Presence of advanced directives, % | 20 (9.2) | 35 (9.7) | 1.06 (0.59-1.91) | 0.85 |
|  |  |  |  |  |
| **RELATIVES** |
|  |  |  |  |  |
| Gender, % Male Female | 67 (30.9)150 (69.1) | 94 (26)268 (74) | 11.27 (0.87-1.86) | 0.21 |
| Age, years, median (IQR) | 58 (46-67) | 56 (45-67) | 1 (0.99-1.01) | 0.91 |
| Relationship with the patient, % Spouse/partner Children Parents Other | 65 (34)105 (55)3 (1.6)18 (9.4) | 127 (38.6)163 (49.5)10 (3)29 (8.8) | 10.79 (0.06-9.74)1.71 (0-913)0.82 (0.01-59.4) | 0.65 |
| Level of education equal or superior to bachelor, % | 124 (57.1) | 183 (50.6) | 0.76 (0.54-1.08) | 0.12 |
| Previous palliative care hospitalization for a close relative, % | 42 (19.4) | 84 (23.2) | 1.26 (0.82-1.92) | 0.28 |
| Palliative care unit admission requested by relatives, % | 146 (67.3) | 224 (61.9) | 0.78 (0.55-1.12) | 0.18 |
| Occupation\*\*, %None PrimarySecondaryTertiary | 9 (8)0 (0)5 (4.4)99 (87.6) | 14 (6.8)5 (2.4)8 (3.9)178 (86.8) |  | NC |
| Retired, % | 80 (76.9) | 131 (85.6) | 1.79 (0.94-3.41) | 0.07 |
| Patient’s surrogate, % | 115 (53) | 214 (59.1) | 1.28 (0.9-1.8) | 0.16 |
| Primary caregiver, % | 128 (59) | 231 (63.8) | 1.22 (0.86-1.74) | 0.25 |
| Presence at home, %  Health-care worker Life support person | 99 (45.6)31 (14.3) | 193 (53.3)48 (13.3) | 1.36 (0.96-1.92)0.91 (0.55-1.49) | 0.080.69 |
| Interview conducted during the lockdown (2020/15/03-2020/11/06) | 50 23) | 90 (24.9) | 1.1 (0.73-1.65) | 0.65 |

HADS=Hospital Anxiety and Depression; OR=Odds Ratio; CI=Confidence Interval; IQR=Inter Quartile Range; NC=Non Convergent

\*The body preparation for funerals is performed by the relatives immediately after death, with nurses and nursing assistants (washing the body, dressing the deceased and having the possibility to practice religious rite)

\*\*Sectors of activities are either agricultural (primary), industrial (secondary) or commercial or related to administration or human health or public action (tertiary)