

Hospital costs of patients with advanced breast cancer increase towards the end of life – but there are several distinct latent subgroups with divergent cost trajectories.

Variability of cost trajectories over the last year of life in patients with advanced breast cancer in the Netherlands

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Objective

To explore the longitudinal patterns of costs of patients with metastatic breast cancer in the Netherlands over the last year of life.

Methods

Setting & Patients

- 558 metastatic breast cancer patients
- Observational study (2010–2017) in 7 hospitals in the Netherlands
- Data from medical records, collected through the SONABRE Registry

Analysis

- Hospital resource use and associated costs (in 2017 €) were assessed over the last twelve months before death
- Group-based trajectory modeling was applied to identify latent groups of cost trajectories
- Zero-inflated Poisson models were fitted with up to 9 clusters and 5 degree polynomials, model selection based on AIC, BIC, and LOOCV
- Differences between latent groups were investigated

Results

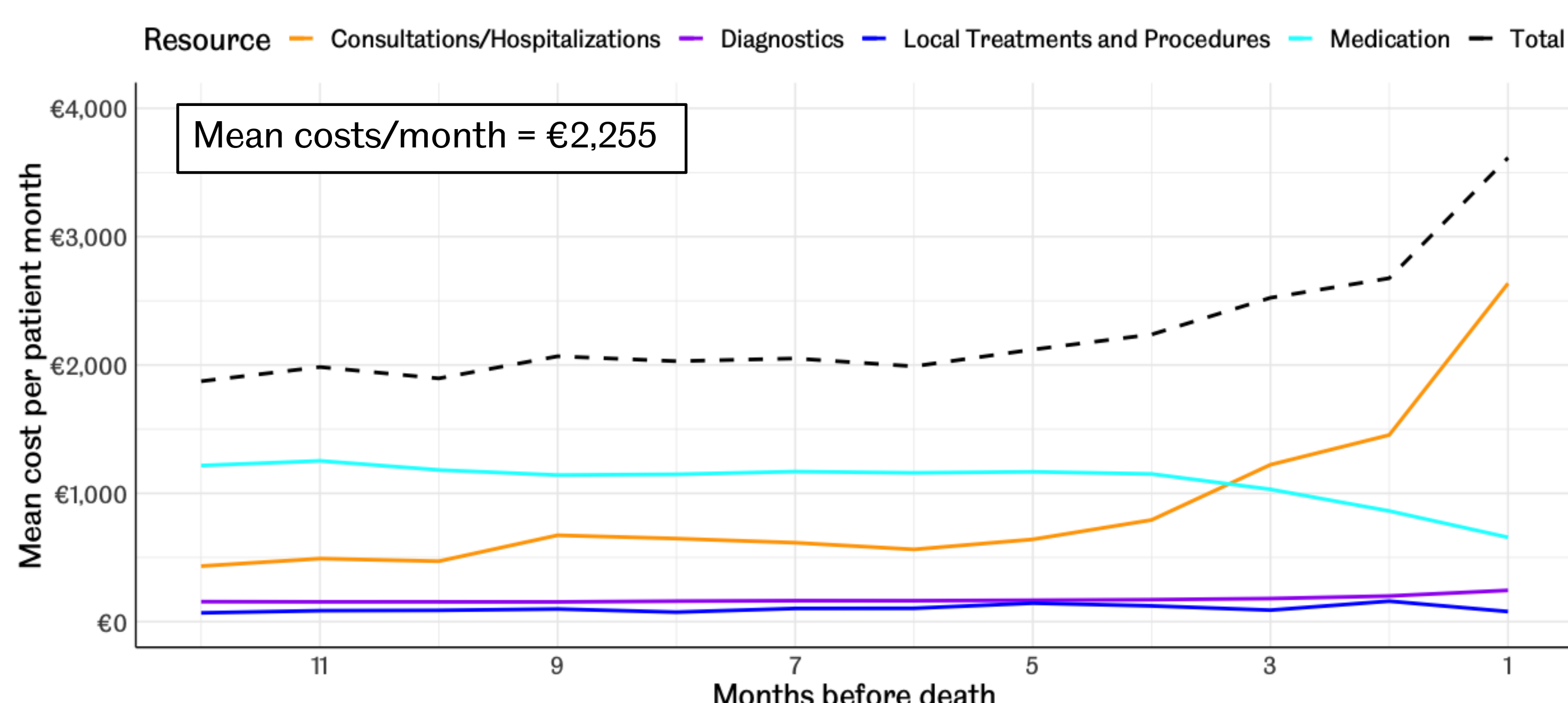


Figure 1. Hospital costs over the last 12 months of life

Results (continued)

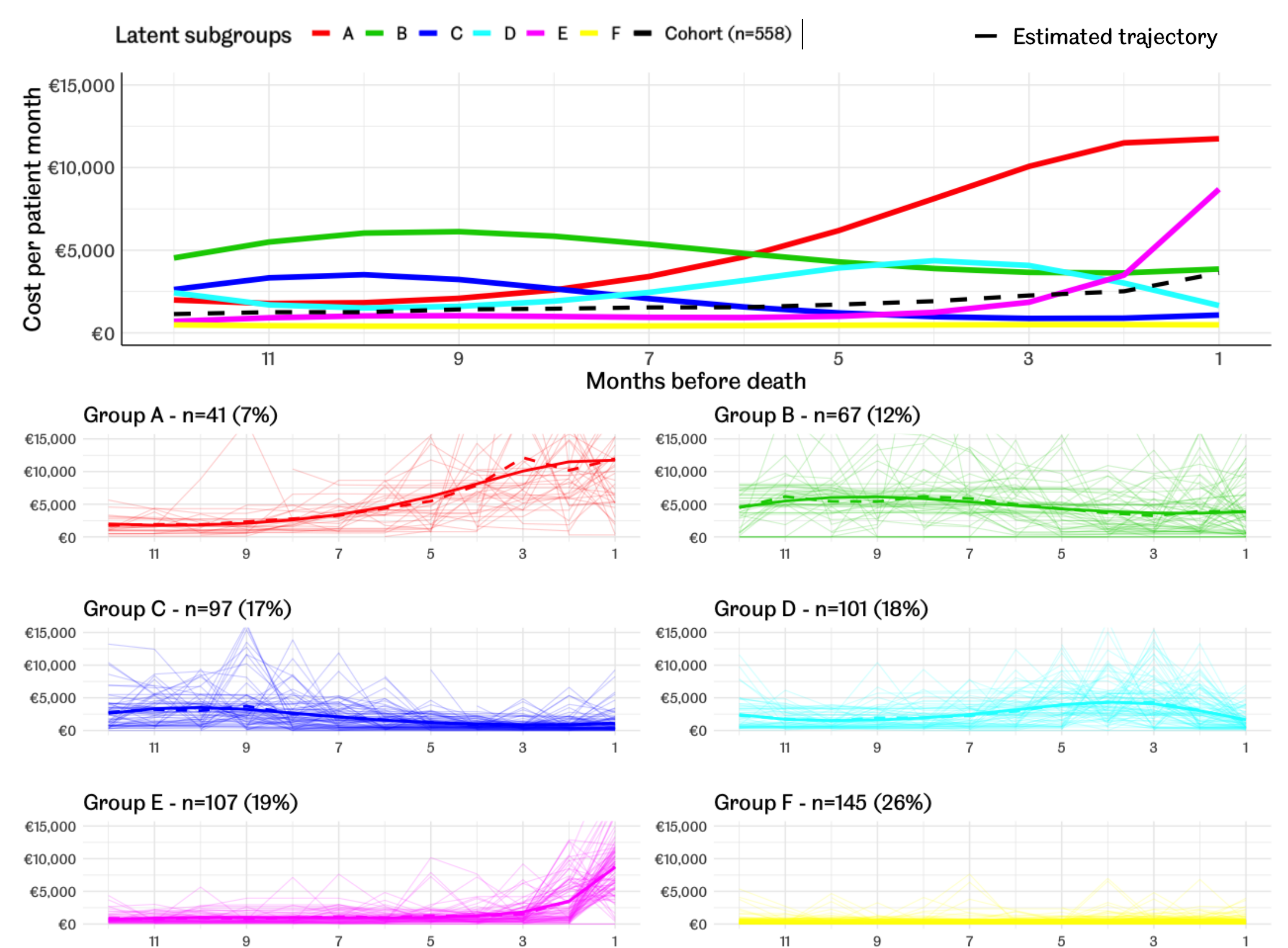


Figure 2. Latent cost trajectory groups

Table 1. Clinical characteristics of latent groups – Mean (SD) or n (%)

Group	Group A	Group B	Group C	Group D	Group E	Group F	p-value
Age	61.8 (12.7)	57.6 (16.2)	65.4 (11.9)	63.3 (13.0)	63.0 (13.3)	69.5 (15.9)	<0.001*
Survival time (days)	539 (543)	602 (497)	604 (472)	525 (475)	471 (473)	688 (487)	<0.001*
< 12 months survival	21 (51%)	28 (42%)	38 (39%)	45 (45%)	56 (52%)	46 (32%)	0.023*
Sites of metastases	2.2 (1.0)	2.1 (1.0)	2.2 (0.9)	2.3 (1.0)	2.2 (1.1)	1.8 (0.9)	<0.001*
Initial receptor status							0.002*
HR+/HER2-	23 (56%)	35 (52%)	61 (63%)	58 (57%)	70 (65%)	108 (74%)	
HR+/HER2+	5 (12%)	10 (15%)	13 (13%)	13 (13%)	6 (6%)	10 (7%)	
HR-/HER2+	6 (15%)	4 (6%)	9 (9%)	16 (16%)	4 (4%)	6 (4%)	
TN	7 (17%)	18 (27%)	14 (14%)	14 (14%)	27 (25%)	21 (14%)	
End-of-life costs (12 months)	53,112 (22,816)	44,352 (27,131)	18,501 (10,897)	24,098 (12,882)	18,956 (8,263)	4,619 (3,655)	<0.001*
Sample n	41	67	97	101	107	145	

Conclusion

- The hospital costs of patients with advanced breast cancer increased towards the end of life, driven by inpatient admissions
- We uncovered six latent patient groups, with distinct cost trajectories, which did not reflect the overall increasing trend
- Latent groups differed with respect to their clinical characteristics however, clear-cut profiles could not be identified



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