HSD53

Hospital Volume Matters: Low-Volume Centres Show Higher Mortality in Pancreatic Cancer Surgery

AGEING-CZ

From Diagnosis to Treatment: Evaluating Timeliness and Treatment Patterns in Czech Pancreatic Cancer Patients

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INTRODUCTION

Pancreatic cancer surgery is highly complex, requiring specialized expertise.

Limited evidence in healthcare systems without formal centralization.

Czech Republic has comprehensive national data but no mandated centralization.

OBJECTIVES

To evaluate the association between hospital **surgical volume and overall survival** in patients undergoing **pancreatic cancer** resection

To analyse real-world **treatment patterns** and time-to-treatment across the Czech healthcare system

METHODS

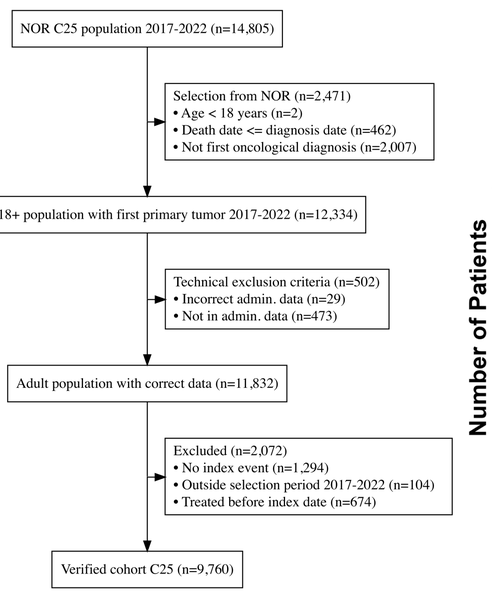
Retrospective cohort using Czech National Cancer Registry (NOR) + claims (2017-2022). Adult patients (≥18 years) with pancreatic cancer.

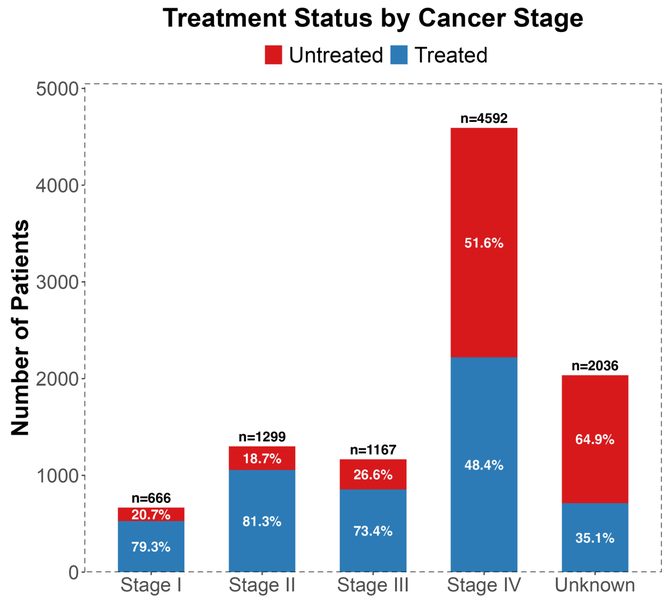
Volume-outcome evaluation sub-cohort: Stage I-II patients who underwent surgical resection as primary treatment within 6 months of diagnosis. Hospital volume was estimated based on all pancreatic resections, not limited to cancer-related procedures.

Cox proportional hazards model, clustered by hospital, with adjustment for age, sex, stage, neoadjuvant therapy, and diagnosis year.

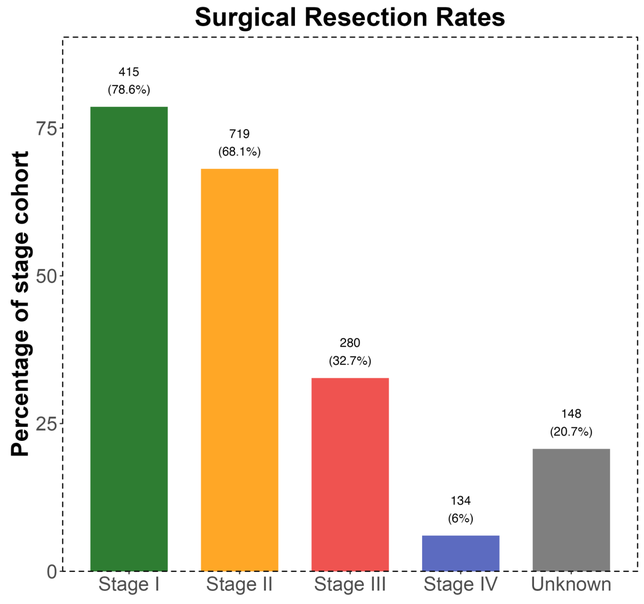
RESULTS

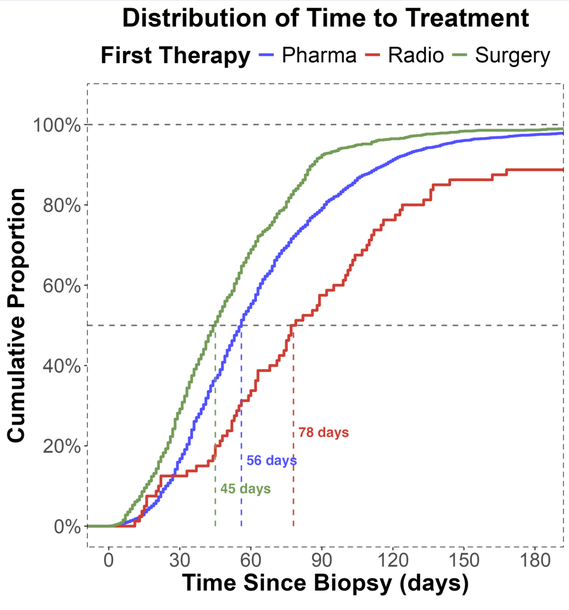
Population



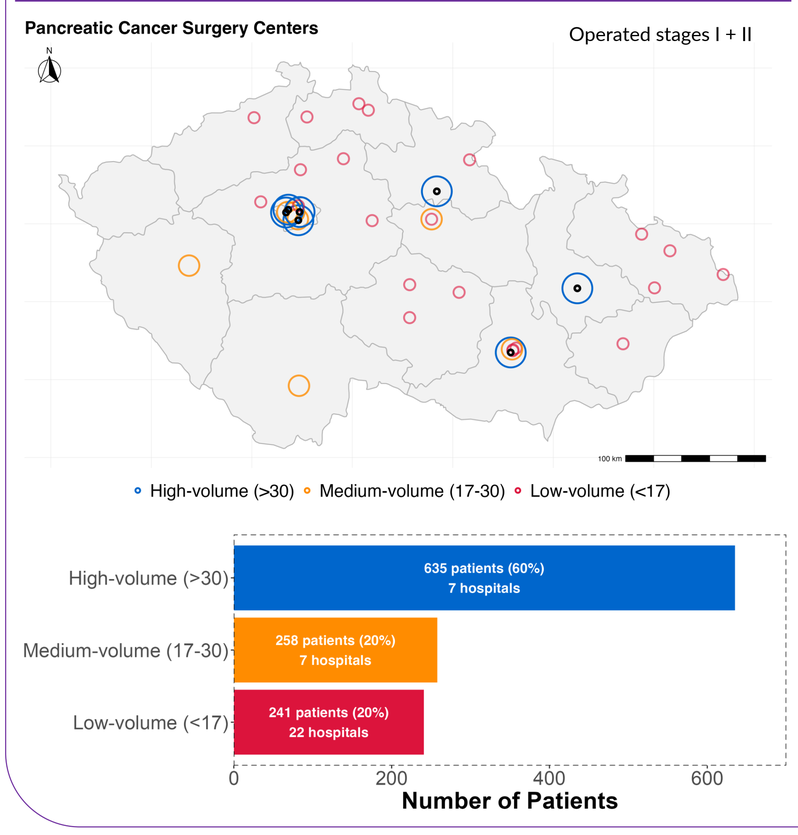


Treatment pattern

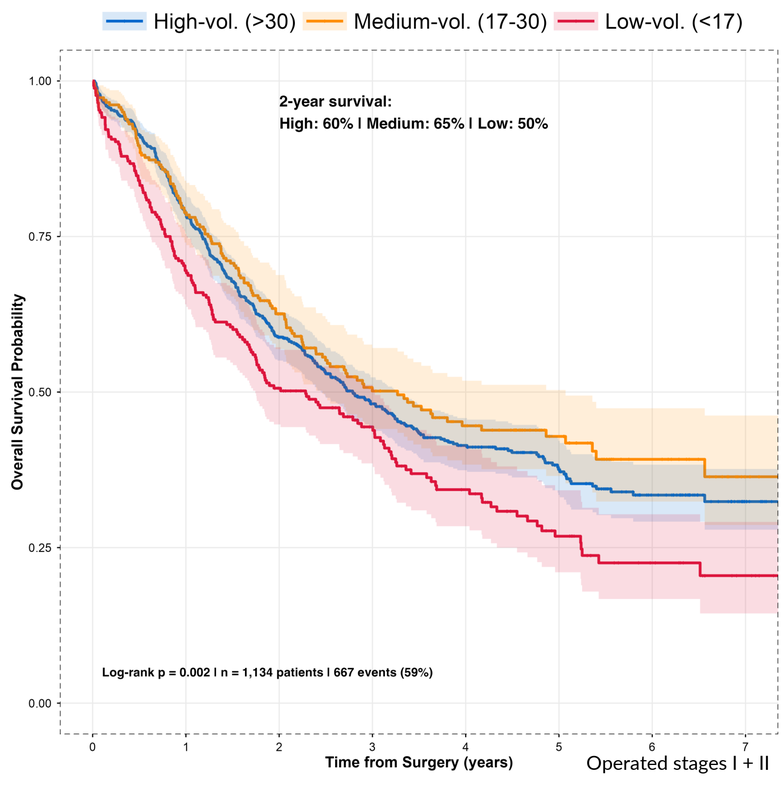




Hospital surgery volume



Hospital surgery volume vs overall survival



Multivariable Cox Regression Analysis for Overall Survival

Variable	N	Event N	aHR	95% CI	P-value
Age					
45-	60	11	0,37	0,19,0,74	**0,005**
45-60	234	112			
60-75	681	434	1,36	1,09,1,70	**0,006**
75+	159	110	1,92	1,55,2,36	**<0,001**
Sex					
Female	584	338			
Male	550	329	1,05	0,89,1,25	0,5
Stage					
Stage I	415	151			
Stage II	719	516	2,32	1,84,2,93	**<0,001**
Neoadjuvant therapy			1,28	0,97,1,70	0,082
Volume					
High-volume (>30)	618	361			
Medium-volume (17-30)	260	136	1,04	0,83,1,29	0,8
Low-volume (<17)	256	170	1,30	1,13,1,50	**<0,001**

aHR = Adjusted Hazard Ratio from Cox proportional hazards model

CONCLUSION

- Patients treated at low-volume centres experience substantially higher mortality risk, even after adjustment for patient and tumour characteristics.
- These findings support the implementation of centralization policies to optimize outcomes for pancreatic cancer patients.
- Importantly, the volume-outcome relationship was non-linear, with comparable outcomes observed between medium-volume and high-volume centres.
- While we observed encouraging centralization trends (only 20% of surgeries at low-volume centres), substantial opportunities remain to optimize care coordination and reduce treatment delays.

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