Mont Saint-Michel, NORMANDY

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Registres des Cancers général de la Manche, général du Calvados, digestif du Calvados et des hémopathies malignes de Basse-Normandie

• CENTRALIZATION OF RECTAL CANCER CARE : WHAT COST. WHAT BENEFIT AND FOR WHICH POPULATION ? **ANALYSIS OF FRANCIM REGISTRIES DATA**

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Epidemiology Incidence of rectal cancer (RC): 13,744 new cases un 2018 in France¹. 1-year survival: 86 %; 5-years: 62 %. Treatment Resection of the mesorectum is the gold standard for the treatment of localized invasive RC. The guality of this surgery and the reduction in the risk of relapse seem to be correlated with the surgical activity level of the center. In France, a threshold of 30 annual interventions for digestive cancer has been set for centers to be authorized to surgically treat RC. Problematic Centralizing the RC care could benefit patients but would likely have a cost that would not be the same for all². The most distant and most disadvantaged populations would be particularly affected by the increase in distances induced by this centralization³. However, its impact and cost have not been studied in France. Objective Study the impact of RC treatments centralization on survival (benefit) and patients travel distance (burden) in metropolitan France and the distribution of these benefits and costs between 2010 and 2015. Methods Study design Retrospective observational cohort study. Population Non-metastatic invasive RC adults patients diagnosed from 2010 to 2015 who received curative surgical treatment. Data collection RC cases identified in the FRANCIM database (16 cancer registries). 0 0 Medico-administrative database The national PMSI (medical information systems program) is queried for name, geographic location and number of RC (C20 code, ICD-10⁴) surgical procedures from treatment centers with surgical activity between 2012 and 2015. Sociodemographic, stage and survival variables for RC are available from registries databases. The EDI (Ecological deprivation index⁵) is calculated for all patients Variables according to their IRIS of residence (geographical unit ~ 2,000 inhabitants). Statistical analysis Geocoding of patients and institutions with RC surgical activity. SIG QGIS • Construction of an origin-destination distance matrix between cases residence and treatment centers with ONEAT3 - OGIS Network Analysis Toolbox 3 (shape road from the National institute of geographic and forestry information - IGN) and identification of the itinerary to the consulted center for each patient. Identification of treatment centers of interest for patients, namely : RStudio • the closest treatment center from the residence place the treatment center consulted Study of the consulted treatment center proximity and activity volume (< 5 or ≥ 5 C20 surgical procedures per year, based on the new French RC surgery authorization

threshold) and associated patient characteristics (Chi-squared test).



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Background

Results

Variables	Treatment center consulted				
	The closest to the residence place Other center		enter		
	Annual C20 surgical procedures				р
	< 5 (n = 53)	≥ 5 (n = 1,011)	< 5 (n = 45)	≥ 5 (n = 2,111)	
	Median (IOR) or number (%)				
Age at diagnosis (years)	72 (65 ; 83)	71 (62 ; 80)	69 (64 ; 76)	68 (60 ; 77)	< 0.001
Sex					0.4
Women	17 (32)	401 (40)	16 (36)	777 (37)	
Men	36 (68)	610 (60)	29 (64)	1 334 (63)	
EDI (quintiles)				l	< 0.001
1 (- deprived)	2 (4)	190 (19)	9 (20)	376 (18)	
2	8 (15)	218 (22)	4 (9)	424 (20)	
3	5 (9)	237 (23)	10 (22)	500 (23)	
4	14 (26)	173 (17)	6 (13)	436 (21)	
5 (+ deprived)	24 (46)	193 (19)	16 (36)	374 (18)	
NA	0	0	0	1	
RC stage					> 0.9
1	27 (51)	455 (45)	19 (42)	981 (47)	
2	14 (26)	276 (27)	14 (31)	575 (27)	
3	12 (23)	280 (28)	12 (27)	555 (26)	
Neoadjuvant treatment					0.3
Surgery only	24 (45)	420 (42)	27 (60)	851 (40)	
Neoadjuvant chemotherapy	0 (0)	9 (1)	0 (0)	26 (1)	
Neoadjuvant radio + chemo	0 (0)	35 (3)	0 (0)	61 (3)	
Neoadjuvant radiotherapy	29 (55)	547 (54)	18 (40)	1,173 (56)	
Latest news					
Follow-up time (since diagnosis, in days)	2,352 (890 ; 2,778)	2,336 (1,476 ; 2,853)	2,345 (1,216 ; 2,917)	2,382 (1,557 ; 2,920)	0.3
Vital status (alive)	28 (53)	597 (59)	23 (51)	1,303 (62)	0.2
Type of center					< 0.001
Hospital center	43 (81)	268 (27)	18 (40)	339 (16)	
University hospital center / Cancer center (CLCC)	0 (0)	80 (7)	0 (0)	645 (31)	
Private center / clinic	10 (19)	663 (66)	27 (60)	1 127 (53)	



Distances between patients and their RC surgical center. FRANCIM registries, 2010-2015 (n = 3,221).

Discussion & Conclusion

- 16 cancer registries distributed across the country (geographical and populational coverage) : Limited selection bias, representativeness of France metropolitan CR cases (except Paris region).
- Currently 2/3 of patients do not consult the closest treatment center to their residence. A concentration of care towards centers with the highest surgical activity (≥ 5 annual RC surgical procedures) would concern only 3 % of patients but would be more restrictive for the oldest and most disadvantaged patients. Other activity thresholds are under consideration. For each of centralization scenarii, costs and potential benefits in terms of survival will be calculated.

¹ Bouvier A-M et al., 2020. Survie des personnes atteintes de cancers en France métropolitaine, 1989-2018, Rectum. INCa. ² Manchon-Walsh P et al., 2016, Improving survival and local control in rectal cancer in Catalonia (Spain) in the context of centralisation : A full cycle audit assessment.

³ Versteeg et al., 2018. Centralisation of cancer surgery and the impact on patient's travel burden ⁴World Health Organization, 2008. International classification of diseases, 10th Revision (ICD-10).

⁵ Pornet et al., 2012. Construction of an adaptable European transnational ecological deprivation index : the French version