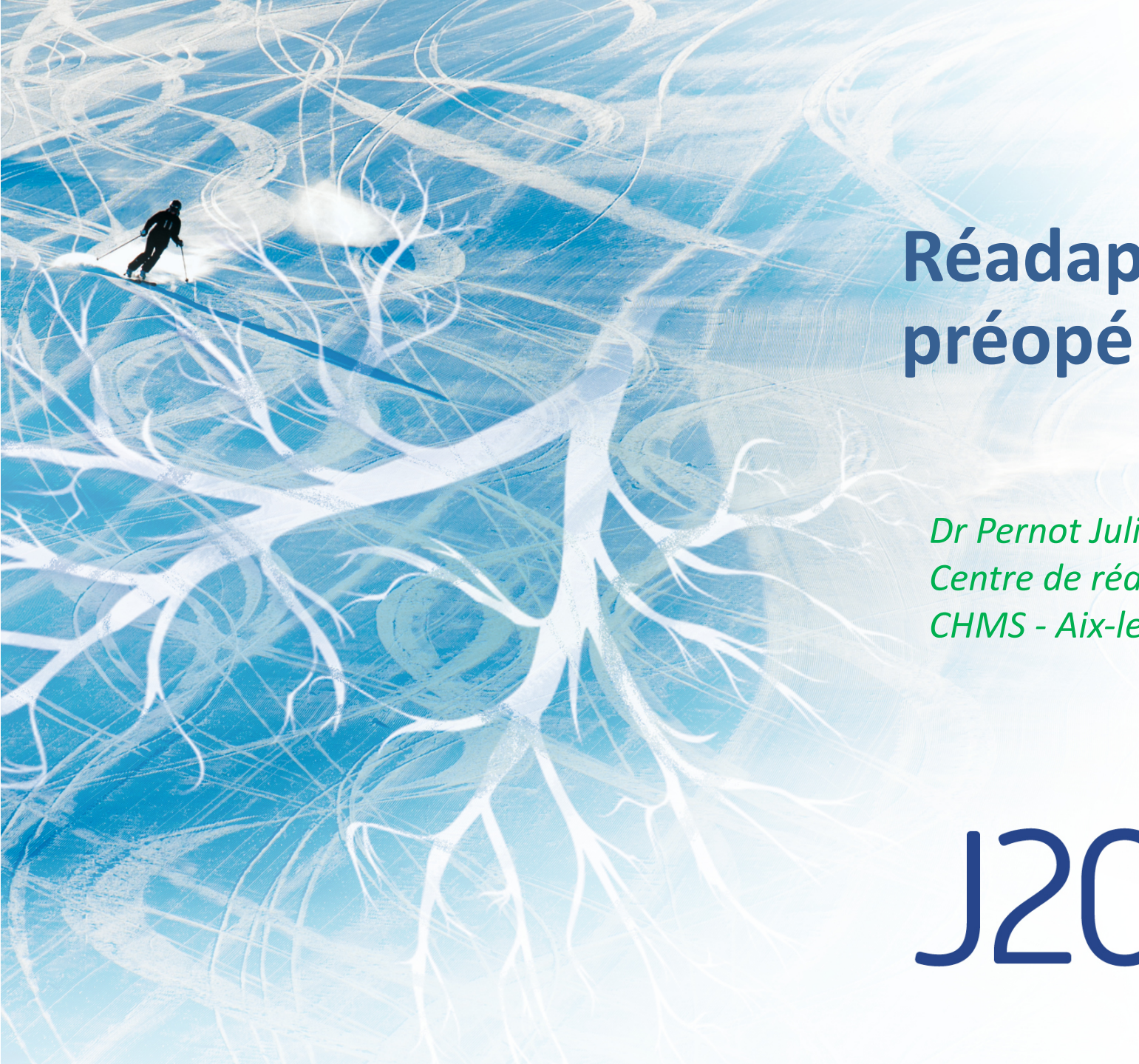


Réadaptation respiratoire préopératoire

Dr Pernot Julien
Centre de réadaptation respiratoire
CHMS - Aix-les-Bains

J20
Chambéry
Centre de Congrès
Le Manège
28 et 29
septembre 2023

CPHG
Collège des Pneumologues des Hôpitaux Généraux

Liens d’intérêts

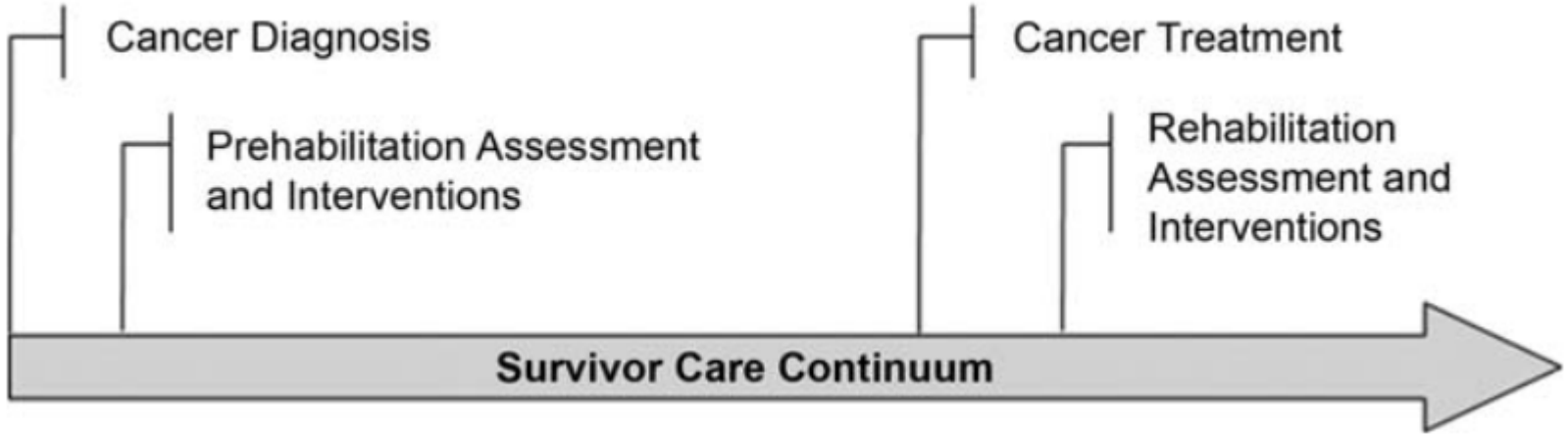
- Aucun conflit d’intérêt pour cette présentation
- Liens d’intérêts : GSK, CHIESI

Introduction conceptuelle

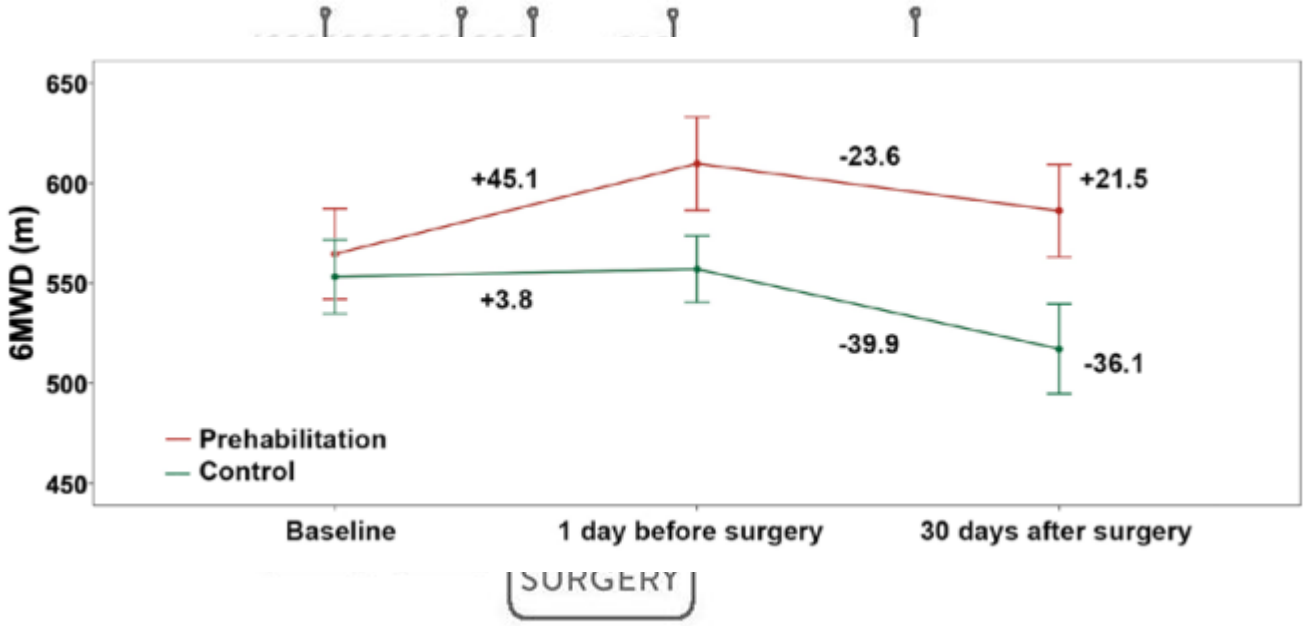
Préhabilitation

- Interventions entre le diagnostic et le début du traitement
- Afin de prévenir/réduire l'incidence et la gravités des déficiences futures

- La préhabilitation prévient, la réadaptation prend en charge les déficiences



Santa Mina 2021
10.3389/fonc.2020.598425



Liu 2019 10.1213/ane.0000000000004342

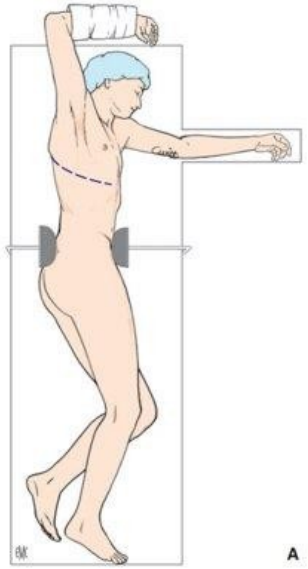
Problématiques

Problématique

- Complications chirurgicales post opératoires

Chirurgie thoracique: techniques

- Thoracotomie
  - Voies d'abord
    - Latérale
    - Latéropostérieure
- Video-thoracoscopie
- Robot-video-thoracoscopie



Complications & voies d'abord

- Etude rétrospective (Moret – 2023 – Rev Mal Resp)
- 223 segmentectomies (204 cancers)
- 27% des patients ≥ 1 complication à 30 jours
- Pas de différence selon la voie d'abord

Complications & voies d'abord

- Etude rétrospective (More
- 223 segmentectomies (20
- 27% des patients ≥ 1 comp
- Pas de différence selon la

Tableau IV : Complications selon le type d'abord

	TH (n=67)	VATS (n=21)	RATS (n=135)	Valeur de p
Complications				
Arythmie	5 (7,4%)	1 (4,7%)	8 (5,9%)	0,874
Chylothorax	0	0	3 (2,2%)	0,371
Pneumopathie	6 (8,9%)	2 (9,4%)	9 (6,7%)	0,798
Atélectasie	2 (3%)	0	3 (2,2%)	0,722
Bullage prolongé	1 (1,5%)	0	8 (5,9%)	0,197
Paralysie récurrentielle	0	0	1 (0.7%)	0,721
Insuffisance respiratoire	1 (1,5%)	0	4 (3%)	0,615
Troubles métaboliques	1 (1,5%)	0	2 (1,5%)	0,854
Hémoptysie	0	0	2 (1,5%)	0,518
Rétention d'urine	0	0	2 (1,5%)	0,518
AVC	0	0	1 (0,7%)	0,721
Iléus / Syndrome occlusif	3 (4,5%)	0	2 (1,5%)	0,306
Ischémie veineuse	0	0	3 (2,2%)	0,371
Epanchement pleural	0	1 (4,7%)	3 (2,2%)	0,299
Embolie pulmonaire	0	0	2 (1,5%)	0,518
Hémorragie post-opératoire	1 (1,5%)	0	0	0,311

Abréviations : AVC : accident vasculaire cérébral

Complications & voies d'abord

- Etude rétrospective (Moret – 2023 – Rev Mal Resp)
- 223 segm
- 27% des

Table 2
Description of complications of all Clavien-Dindo grades occurring in the 90 days after surgery. The most severe complications occurred in participants who had more than one complication.

Complications, n participants	Clavien-Dindo grade							Total
	1	2	3A	3B	4A	4B	5	
Infectious complications								
pneumonia	0	4	1	0	0	0	0	5
pleurisy	0	0	1	0	1	0	0	2
parietal abscess	0	1	0	0	0	0	0	1
other infection	0	1	0	0	0	0	0	1
Pleuro-pulmonary complications								
air leak	10	1	0	0	0	0	0	11
atelectasis	1	1	2	0	0	0	0	4
respiratory distress	0	2	0	0	1	1	0	4
pneumothorax	0	0	3	1	0	0	0	4
subcutaneous emphysema	0	0	2	1	0	0	0	3
pleural effusion	1	0	1	1	0	0	0	3
pulmonary embolism	0	0	0	1	0	1	0	2
Other complications								
cardiac rhythm disorder	1	2	1	0	0	0	0	4
nerve paralysis[a]	3	0	0	0	0	0	0	3
death	0	0	0	0	0	0	1	1
Total	16	12	11	4	2	2	1	48
	14%	10%	9%	3%	2%	2%	1%	41%

[a] Recurrent laryngeal nerve or phrenic nerve.

Boujibar 2022 J Physiotherapy
10.1016/j.jphys.2022.03.001

Complications : impact sur la durée de séjour et la mortalité

Table 4. Postoperative LOS and Mortality According to the Number of PPCs

	No. of PPCs				Total No. of Patients
	0	1	2–3	≥4	
No. (%) of patients	2,341 (95.0)	66 (2.7)	37 (1.5)	20 (0.8)	2,464 (100)
Postoperative LOS, median (10–90th percentile), d*	3 (1–11)	10 (3–26.5)	11 (3.8–27.8)	27 (10.4–105.1)	3 (1–12)
30-day mortality, n (%)†	11 (0.5)	6 (9.1)	11 (29.7)	7 (35.0)	35 (1.4)
90-day mortality, n (%)†	29 (1.2)	7 (10.6)	12 (32.4)	11 (55.0)	59 (2.4)

* Kruskal-Wallis test for comparing means, $P < 0.0001$. † Mantel-Haenszel test for mortality trend, $P < 0.0001$.
LOS = length of stay; PPC = postoperative pulmonary complication, a composite outcome in which 1 or more PPCs might be observed.

Atelectasis | Pneumothorax | Bronchospasm | Aspiration pneumonitis | Respiratory failure | Pleural effusion | Respiratory infection

Canet 2010 Anesthesiology
10.1097/ALN.0b013e3181fc6e0a

VO2max et complications post op

Respiratory Medicine (2007) **101**, 1790–1797

Complications of lung resection and exercise capacity: A meta-analysis

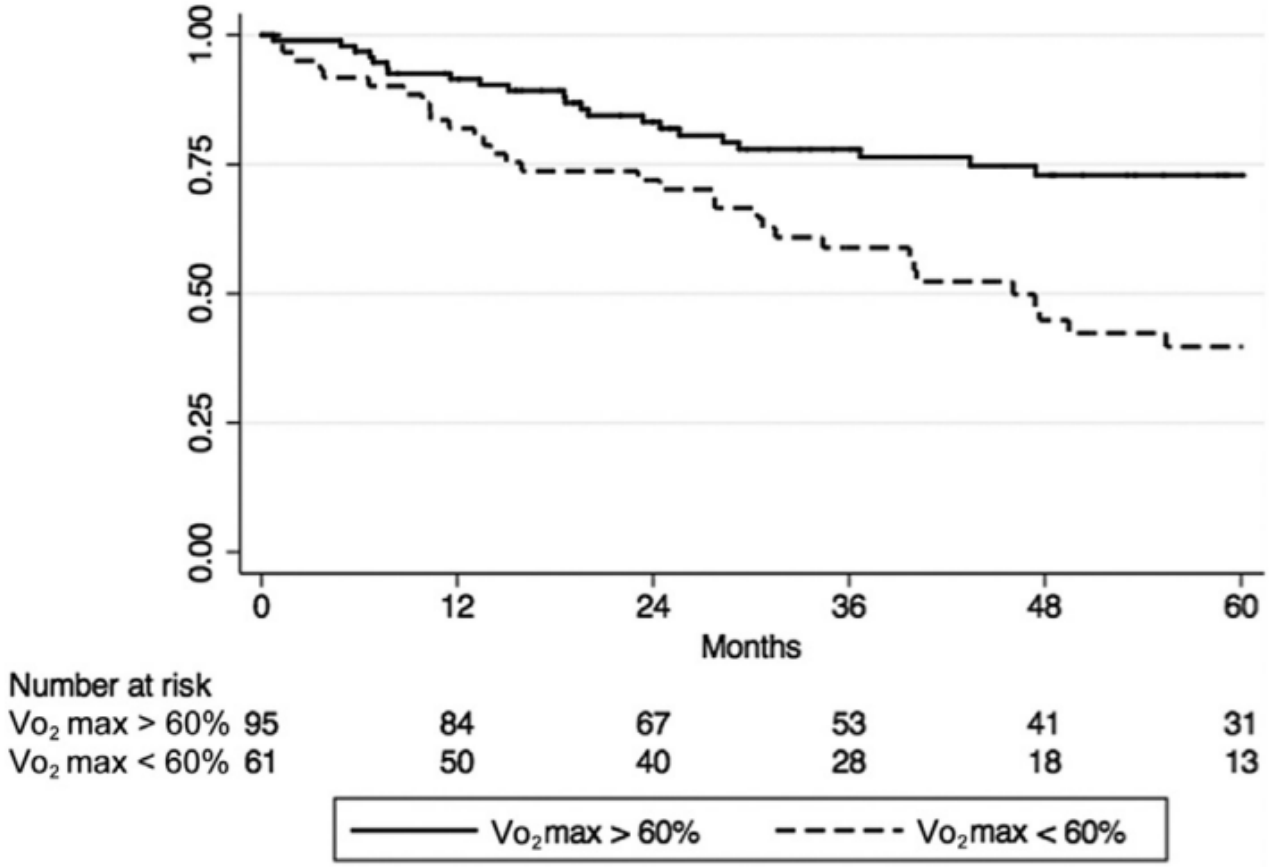
Roberto Benzo[a,d,*], George A. Kelley[b], Laura Recchi[c], Albert Hofman[d,e], Frank Sciurba[a]

Study (Ref. no.)	*N*	PPC (%)	VO_{2max} (ml kg^{-1} min^{-1})		VO_{2max} (% predicted)	
			No PPC	PPC	No PPC	PPC
Bechard and Wetstein[6]	50	14	17(2)	9.9(9)	NA	NA
Bolliger et al.[1]	80	20	19(5)	14(3)	84(19)	61(11)
Boysen wt al.[12]	17	12	20(5)	16(3)	62(12)	60(3)
Brunelli et al.[19]	160	14	25(4)	23(4)	111(22)	113(20)
Brustche et al.[4]	125	25	22(5)	17(5)	78(20)	66(20)
Epstein et al.[20]	42	33	16(4)	16(5)	NA	NA
Richter Larsen et al.[7]	97	32	19(4)	18(4)	84(17)	77(20)
Markos et al.[10]	53	30	17(6)	16(6)	69(20)	75(28)
Morice et al.[21]	8	25	17(2)	15(0.7)	67(10)	62(9)
Smith et al.[5]	22	50	22(4)	14(2)	73(17)	55(9)
Torchio et al.[18]	54	51	23(4)	19(1)	95(19)	89(7)
Villani and Busia[22]	150	29	21(4)	19(3)	75(13)	71(11)
Wang et al.[11]	40	33	17(4)	16(4)	NA	NA
Wang et al.[3]	57	33	19(4)	15(2)	70(13)	57(14)
Overall $\bar{X}$ (SD)	955	28(11)	20(2)	16(3)	80(13)	72(13)

Buts de la préhabilitation

1. Prévenir les complications post opératoires

VO_2 max pré-opératoire et survie



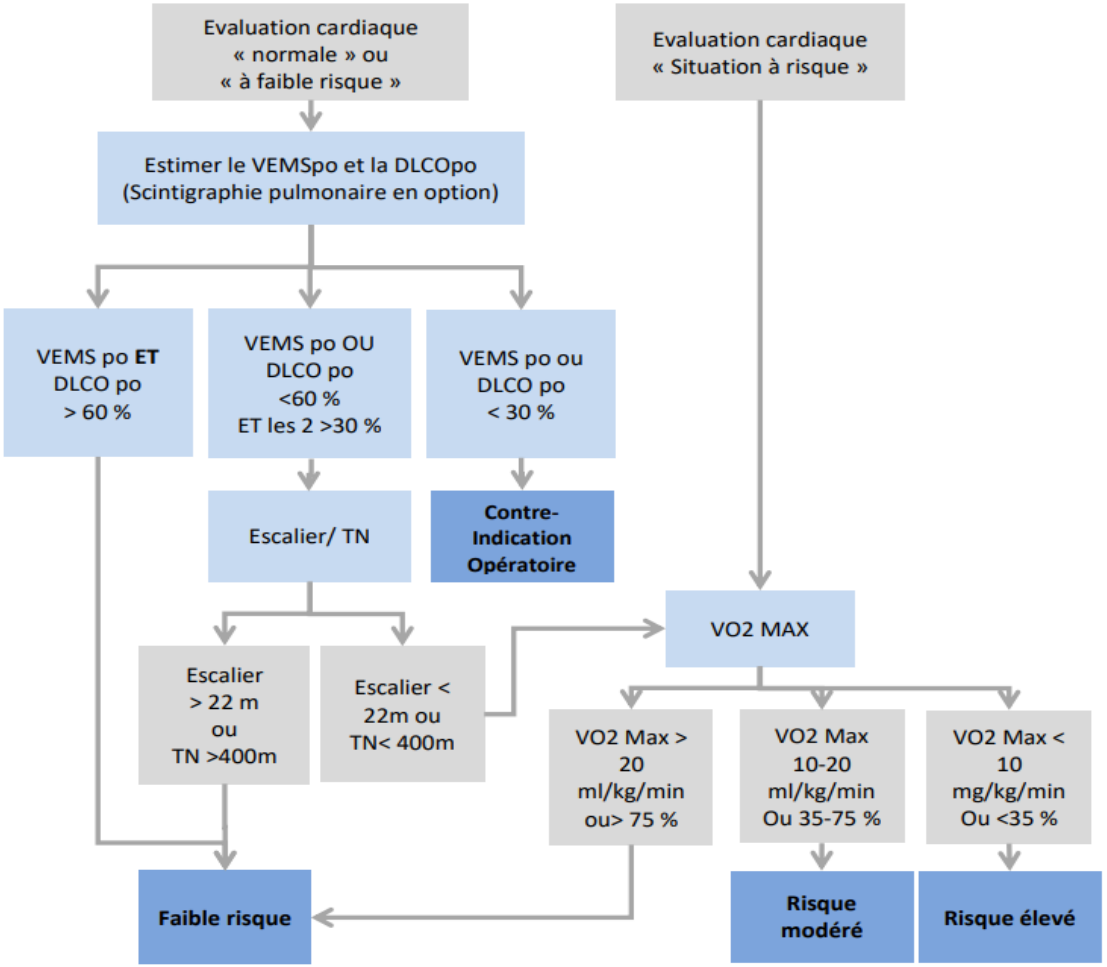
CBNPC - Stade I - opérés

Survie médiane à 4 ans:

- 73% si VO2>60%
- 40% si VO2<60%

Brunelli - Ann Thorac Surg – 2014
10.1016/j.athoracsur.2014.04.029

Opérabilité



Facteurs de risque	Score
Créatinine> 176 µMoles/l	1
Cardiopathie ischémique	1,5
Maladie cérébro-vasculaire	1,5
Pneumonectomie envisagée	1,5
Interprétation : *Valeur du score*	*Mortalité post-opératoire*
Score = 0 (A)	*1.5%*
Score 1 à 1,5 (B)	*5.8%*
Score >1,5-2,5 (C)	*9%*
Score >2,5 (D)	*23%*

Brunelli 2013 Chest 10.1378/chest.12-2395

Buts de la préhabilitation

1. Prévenir les complications post opératoires
2. Améliorer le VO_2max :
   - Survie
   - Opérabilité

Contenu du stage

Contenu d'un stage de préhabilitation

- Activité Physique Adaptée (APA)
- Santé dentaire
- Anxiété préopératoire
- Sevrage tabagique
- Kinésithérapie respiratoire
- SAOS
- VNI
- Anémie
- Composition corporelle : dénutrition et obésité
- Aides à domicile (post opératoire)

Équipe inter/transdisciplinaire !
À Aix-les-Bains : EAPA, kiné, assistante sociale, pneumologue, diététicienne, psychologue, tabacologue.

Activité physique adaptée

- Endurance
  - Continu > 30min, 60-80% Pmax ou selon ressenti du patient
  - Interval training, High Intensity Interval Training (HIIT)
    - Probablement + efficace pour augmenter VO2
    - 15’’/15’’ – 30’’/30’’ – 1’/3’…
- Résistance
  - Elastiques, haltères…
- Durée
  - 3x/jour - 2x/sem
  - 7 – 30 jours

Pehlivan 2011
Benzo 2011
Hwang 2012
Morano 2013
Stefanelli 2013
Wilson 2014
Lai 2016
Licker 2016
Bhatia 2019
Ferte 2022

APA : bénéfices

Cochrane Library

Cochrane Database of Systematic Reviews

2017

Preoperative exercise training for patients with non-small cell lung cancer (Review)

Cavalheri V, Granger C

PPC : RR=0,33

Drain : -3,3 jours (8 -> 5 j)

Durée de séjour : -4,3 (11-> 6,5 j)

SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

Preoperative exercise training compared to no exercise training for patients scheduled to undergo lung resection for non-small cell lung cancer

Patient or population: patients scheduled to undergo lung resection for non-small cell lung cancer
Setting: the studies were based in the USA, China, Brazil, Turkey, and Italy.
Intervention: preoperative exercise training
Comparison: no exercise training

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with no exercise training	Risk with preoperative exercise training				
Number of patients who developed postoperative pulmonary complications	Study population 22 per 100	7 per 100 (4 to 13)	RR 0.33 (0.17 to 0.61)	158 (4 RCTs)	⊕⊕◯◯ LOW [1,2]	
Number of days patients needed an intercostal catheter	The mean number of days patients needed an intercostal catheter in the control groups ranged from 7.4 to 8.8 days	The number of days patients needed an intercostal catheter in the intervention groups was, on average, 3.33 fewer days (95% CI 5.35 to 1.3 fewer days)	-	38 (2 RCTs)	⊕⊕◯◯ LOW [1,2]	
Postoperative length of hospital stay	The mean postoperative length of hospital stay in the control groups ranged from 9.7 to 12.2 days	The postoperative length of hospital stay in the intervention groups was, on average, 4.34 fewer days (95% CI 5.65 to 3.03 fewer days)	-	158 (4 RCTs)	⊕⊕◯◯ LOW [1,2]	

Cochrane 2017
10.1002/14651858.CD012020.pub2.

Santé dentaire

Evaluation of effects of perioperative oral care intervention on hospitalization stay and postoperative infection in patients undergoing lung cancer intervention

Shigeo Ishikawa[1] · Iku Yamamori[1] · Satoshi Takamori[2] · Kenichiro Kitabatake[1] · Kaoru Edamatsu[1] · Ayako Sugano[1] · Hiroyuki Oizumi[2] · Hirohisa Kato[2] · Jun Suzuki[2] · Kaito Sato[2] · Kazuyuki Yusa[1] · Mitsuaki Sadahiro[2] · Mitsuyoshi Iino[1]

398 patients référés au service maxillofacial – vs 188 non pris en charge
Extraction des dents mobiles (risque d'inhalation), celle avec parodontite sévère, ou avec patho périapicale. Ttt des caries, ou mise en place d'un matériel provisoire.

1-4 j avant la chirurgie

Durée de séjour : 7,8 j (oral care) vs 9,7 j (control) $p<0,02$

Ishikawa 2020 Supportive Care in Cancer
10.1007/s00520-020-05450-9

Santé dentaire

Table 2 Backward multiple regression analysis of risk factors for postoperative hospital stay

	Postoperative hospital stay										
	Univariate						Multivariate				
Variable	B	S.E	ß	t	*p*-value		B	S.E	ß	t	*p*-value	
Age (years)	0.108	0.039	0.114	2.782	< 0.001	*	0.084	0.035	0.089	2.368	0.018	*
BMI (kg/m^{-2})	0.071	0.111	0.026	0.639	0.523							
Diabetes mellitus (yes vs. no)	0.670	0.952	0.029	0.704	0.482							
Postoperative complications[†]	6.996	0.880	0.313	7.948	< 0.001	*	5.361	0.856	0.240	6.260	< 0.001	*
FEV1.0 (%)	− 0.019	0.035	− 0.023	− 0.545	0.586							
FVC (%)	− 0.031	0.011	− 0.112	− 2.724	0.007	*						
Intraoperative bleeding (g)	0.011	0.001	0.322	8.218	< 0.001	*	0.007	0.001	0.214	5.252	< 0.001	*
Operation time (minutes)	0.024	0.006	0.174	4.272	< 0.001	*						
Sex (female vs. male)	− 1.688	0.758	− 0.092	− 2.226	0.026	*						
Operative approach (thoracoscopic surgery vs. open surgery)	− 4.700	0.757	− 0.249	− 6.208	< 0.001	*	-2.626	0.757	-0.139	-3.470	0.001	*
Brinkman Index	0.001	0.001	0.103	2.498	0.013	*						
Surgical site (left vs. right)	0.299	0.753	0.016	0.397	0.691							
Stage (Ib-III vs. 0 or Ia)	4.437	0.765	0.234	5.799	< 0.001	*						
Type of resection (lobectomy resection vs. wedge or segmental resection)	2.666	0.758	0.144	3.515	< 0.001	*						
Oral care intervention (no vs. yes)	1.904	0.787	0.100	2.419	0.016	*	1.583	0.713	0.083	2.221	0.027	*

Ishikawa 2020 Supportive Care in Cancer 10.1007/s00520-020-05450-9

Santé dentaire

Effects of perioperative oral care on prevention of postoperative pneumonia after lung resection: Multicenter retrospective study with propensity score matching analysis

280 patients référés auprès d'un dentiste – 441 contrôles

Pneumonie post op : 4,6% (oral care) vs 9,3% (control) p =0,02

Further, multivariate analysis showed the following variables to be significantly correlated with postoperative pneumonia : FEV1% (odds ratio [OR]: 0.975, 95% confidence interval [CI]: 0.953–0.997), open surgery (OR: 2.158, 95% CI: 1.068–4.358), lesser serum albumin concentration (OR: 0.520, 95% CI: 0.284–0.952), greater operation time (OR: 1.002, 95% CI: 1.000–1.004), and lack of oral care intervention (OR: 2.946. 95% CI: 1.476–5.883).

Iwata Surgery 2019
10.1016/j.surg.2018.11.020

Anémie

Journal of Cancer 2019, Vol. 10 2047

IVYSPRING INTERNATIONAL PUBLISHER

Journal of Cancer

2019; 10(9): 2047-2056. doi: 10.7150/jca.29410

Research Paper

Preoperative anemia as a prognostic factor in patients with lung cancer: a systematic review and meta-analysis of epidemiological studies

Yang Liu, Yun-Peng Bai, Zi-Fang Zhou, Chang-Rui Jiang, Zhe Xu, Xiao-Xi Fan✉

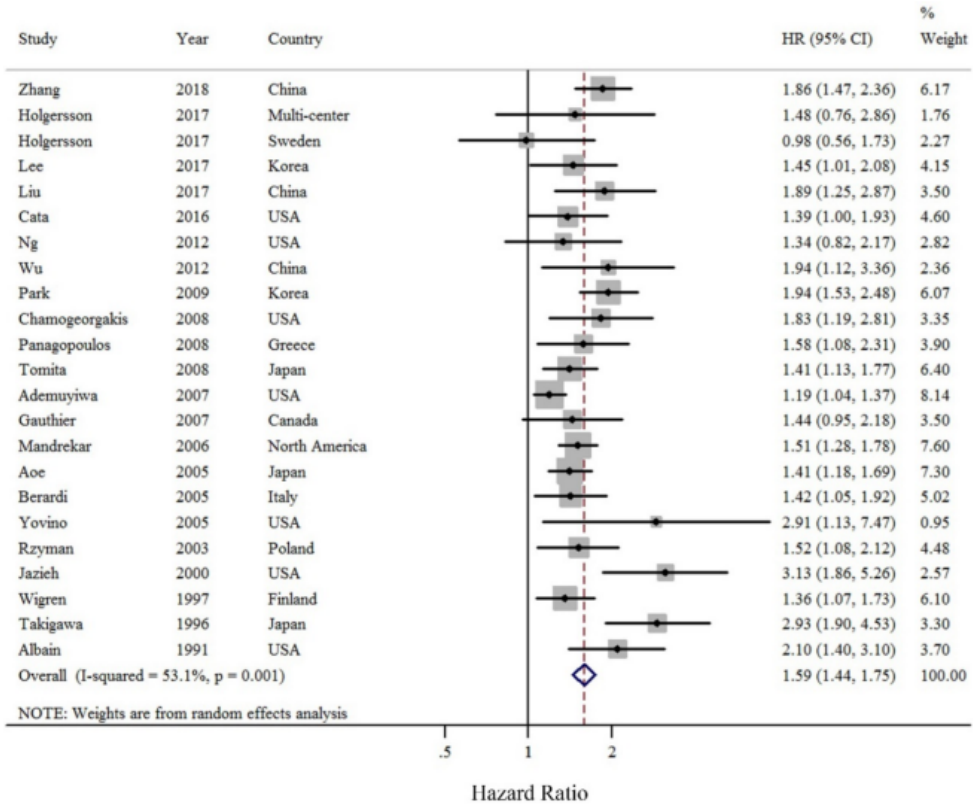


Figure 2. Forest plot (random effects model) of pre-operative anemia and OS of LC patients. The squares indicate study-specific hazard ratios (size of the square reflects the study-specific statistical weight); the horizontal lines indicate 95% CIs; and the diamond indicates the summary hazard ratio estimate with its 95% CI.

→ HR (mortalité) = 1.58

\+ ↑ risque de transfusion, durée de séjour

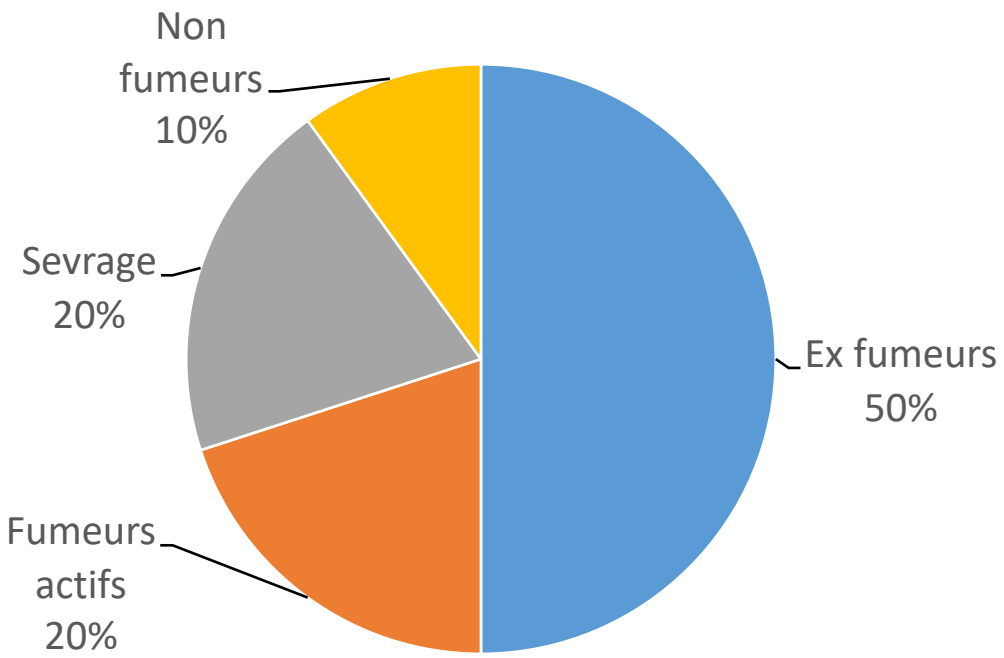
-> screening Hb + ferritinémie

-> perfusion ferritine/B12/B9 + EPO

Liu 2019 JoCancer
Muñoz 2017 Anaesthesia
Spahn 2019 Lancet

Sevrage tabagique

- Prévalence du tabagisme (Aix les Bains - 482 patients)



- « Il vaut mieux ne pas arrêter de fumer, qu'arrêter dans les [2 mois/1 mois/ 3 semaines…] avant la chirurgie »

Sevrage tabagique

Stopping Smoking Shortly Before Surgery and Postoperative Complications

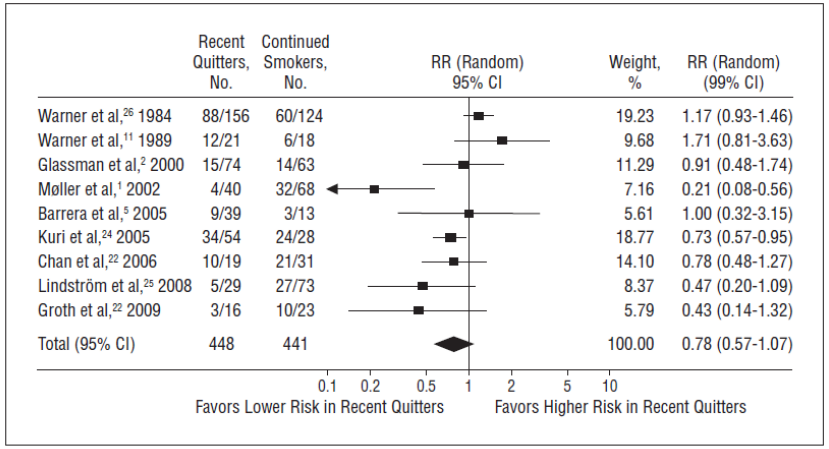


Figure 2. All included studies. Total events, 180 recent quitters and 197 continued smokers. Test for heterogeneity, χ^2_8=23.61 (P=.003), I^2=66.1%. Test for overall effect, Z=1.52 (P=.13). CI indicates confidence interval; RR, relative risk.

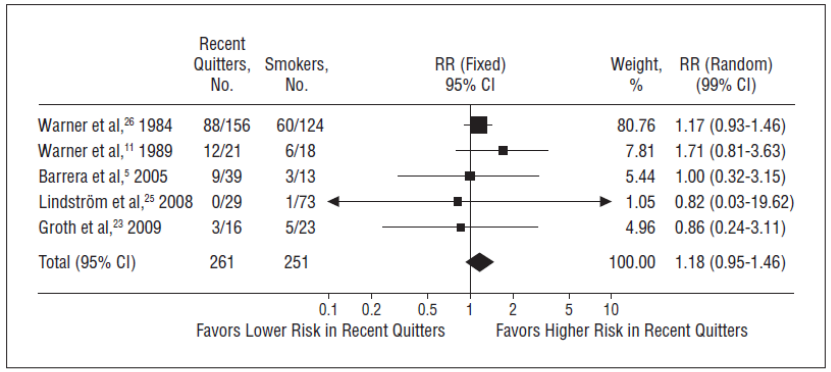


Figure 4. Studies of pulmonary complications. Total events, 112 recent quitters and 75 smokers. Test for heterogeneity, χ^2_4=1.32 (P=.86), I^2=0%. Test for overall effect, Z=1.53 (P=.13). CI indicates confidence interval; RR, relative risk.

Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis

Comparisons	No of Patients	RR [95% CI]	I^2%	P value	References
CS vs. NS	4565	2.11 [1.51, 2.94]	61%	<0.0001	12, 22, 23-26, 29,30, 32
< 2 wk vs. NS	3568	2.51 [1.85, 3.39]	35%	<0.00001	25, 26, 29, 32
2 - 4 wk vs. NS	1646	2.80 [1.73, 4.52]	40%	<0.0001	26, 29, 32
> 4 wk vs. NS	5897	1.39 [1.18, 1.65]	52%	0.0001	20, 24, 26, 29, 30, 32, 40
> 8 wk vs. NS	1742	1.16 [0.76, 1.77]	50%	0.50	12, 20, 21, 25, 26

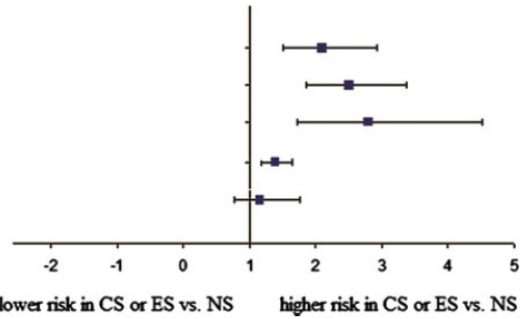


Fig. 2 Summary of the meta-analyses of postoperative respiratory complications in current smokers or ex-smokers compared with non-smokers. The squares indicate the overall relative risk and the horizontal lines indicate the 95% confidence interval for each time interval. CS = current smoker; NS = non-smoker; ES = ex-smokers

Myers 2011 – Arch Intern Med 10.1001/archinternmed.2011.97
Wong 2012 - Can J Anesth 10.1007/s12630-011-9652-x

Sevrage tabagique

J20 Chambéry 28 et 29 septembre 2023 — CPHG

Cochrane Library

Cochrane Database of Systematic Reviews

2014

Interventions for preoperative smoking cessation (Review)

Figure 4. Behavioural intervention versus control: Postoperative morbidity: Any complication.

Study or Subgroup	Favours intervention Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
1.3.1 Intensive intervention							
Møller 2002	10	56	27	52	57.5%	0.34 [0.19, 0.64]	2002
Lindström 2008	10	48	22	54	42.5%	0.51 [0.27, 0.97]	2008
Subtotal (95% CI)		**104**		**106**	**100.0%**	**0.42 [0.27, 0.65]**	
Total events	20		49				
Heterogeneity: Chi² = 0.76, df = 1 (P = 0.38); I² = 0%							
Test for overall effect: Z = 3.89 (P < 0.0001)							
1.3.2 Brief intervention							
Sørensen 2003a	11	27	13	30	18.1%	0.94 [0.51, 1.73]	2003
Sørensen 2007	6	101	4	48	8.0%	0.71 [0.21, 2.41]	2007
Thomsen 2010	35	57	38	62	53.4%	1.00 [0.75, 1.33]	2009
Lee 2013	11	84	14	84	20.5%	0.79 [0.38, 1.63]	2013
Subtotal (95% CI)		**269**		**224**	**100.0%**	**0.92 [0.72, 1.19]**	
Total events	63		69				
Heterogeneity: Chi² = 0.68, df = 3 (P = 0.88); I² = 0%							
Test for overall effect: Z = 0.62 (P = 0.54)							

Risk Ratio M-H, Fixed, 95% CI

0.1 0.2 0.5 1 2 5 10

Favours intervention Favours control

Test for subgroup differences: Chi² = 9.44, df = 1 (P = 0.002), I² = 89.4%

Intensive > 4 semaines, cs tabacologue + substitution nicotinique

Figure 3. Forest plot of comparison: 1 Behavioural intervention versus control, outcome: 1.1 Smoking cessation at time of surgery.

Study or Subgroup	Intervention Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
1.1.1 Intensive behavioural intervention						
Møller 2002	36	56	4	52	81.5%	8.36 [3.19, 21.86]
Lindström 2008	19	48	1	54	18.5%	21.38 [2.97, 153.72]
Subtotal (95% CI)		**104**		**106**	**100.0%**	**10.76 [4.55, 25.46]**
Total events	55		5			
Heterogeneity: Chi² = 0.73, df = 1 (P = 0.39); I² = 0%						
Test for overall effect: Z = 5.41 (P < 0.00001)						
1.1.2 Brief behavioural intervention						
Shi 2013	65	87	65	82	31.1%	0.94 [0.80, 1.11]
Wolfenden 2005	92	118	51	79	28.4%	1.21 [1.00, 1.46]
Ratner 2004	81	117	62	120	28.5%	1.34 [1.09, 1.65]
Sørensen 2007	23	101	6	48	3.8%	1.82 [0.79, 4.18]
Andrews 2006	18	51	8	51	3.7%	2.25 [1.08, 4.70]
Thomsen 2010	16	57	7	62	3.1%	2.49 [1.10, 5.60]
Lee 2013	12	84	3	84	1.4%	4.00 [1.17, 13.66]
Subtotal (95% CI)		**615**		**526**	**100.0%**	**1.30 [1.16, 1.46]**
Total events	307		202			
Heterogeneity: Chi² = 23.91, df = 6 (P = 0.0005); I² = 75%						
Test for overall effect: Z = 4.54 (P < 0.00001)						

Risk Ratio M-H, Fixed, 95% CI

0.005 0.1 1 10 200

Favours control condition Favours behavioural int

Test for subgroup differences: Chi² = 22.70, df = 1 (P < 0.00001), I² = 95.6%

Analysis 1.2. Comparison 1 Behavioural intervention versus control, Outcome 2 Smoking cessation at 12-month follow-up.

Study or subgroup	Intervention n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Weight	Risk Ratio M-H, Fixed, 95% CI
1.2.1 Intensive behavioural intervention					
Møller 2002	13/56	2/52		5.47%	6.04[1.43,25.48]
Lindström 2008	18/48	9/53		22.58%	2.21[1.1,4.44]
Subtotal (95% CI)	**104**	**105**		**28.05%**	**2.96[1.57,5.55]**
Total events: 31 (Intervention), 11 (Control)					
Heterogeneity: Tau²=0; Chi²=1.61, df=1(P=0.2); I²=38.01%					
Test for overall effect: Z=3.37(P=0)					
1.2.2 Brief behavioural intervention					
Ratner 2004	22/111	23/117		59.1%	1.01[0.6,1.7]
Thomsen 2010	7/55	5/58		12.85%	1.48[0.5,4.38]
Subtotal (95% CI)	**166**	**175**		**71.95%**	**1.09[0.68,1.75]**
Total events: 29 (Intervention), 28 (Control)					
Heterogeneity: Tau²=0; Chi²=0.39, df=1(P=0.53); I²=0%					
Test for overall effect: Z=0.37(P=0.71)					

Thomsen Cochrane 2014

Anxiété préopératoire

- Prévalence 60-80%
- Complications
  - Augmentation doses de propofol & sevoflurane
  - Réveil lent, compliqué, ↑ douleur/consommation d'antalgiques post-opératoire

Mackenzie 1989; 10.1111/j.1365-2044.1989.tb11349.x
Miller 1999 10.1097/00000539-199902000-00005
Kil 2012 Br J Anaesth 10.1093/bja/aer305
Kain 1996 Arch Ped Ado Med, 10.1001/archpedi.1996.02170370016002
Kain 2000 Anesth 10.1097/00000542-200007000-00024

Anxiété préopératoire : prise en charge et prévention

- Éducation
  - soutien psychologique et émotionnel
  - informations sur la chirurgie, anesthésie, suites opératoires…
  - techniques de relaxation, cohérence cardiaque
- Communication thérapeutique
  - l'inconscient ne connait pas la négation
- Éviter de mixer patients préop et post-op…

Alanazi 2014
10.12968/bjon.2014.23.7.387
Walker 2002
10.12968/bjon.2002.11.8.10166

Kinésithérapie respiratoire

- Spirométrie incitative
  - Largement utilisée

Kinésithérapie respiratoire

- Spirométrie incitative
  - Largement utilisée

CHEST

Volume 120, Issue 3, September 2001, Pages 971-978

Reviews

The Effect of Incentive Spirometry on Postoperative Pulmonary Complications: A Systematic Review

Tom J. Overend PhD, PT [a], Catherine M. Anderson MSc, PT [b], S. Deborah Lucy PhD, PT [a], Christina Bhatia PT [b], Birgitta I. Jonsson MSc, PT [b], Catherine Timmermans PT [b]

Presently, the evidence does not support the use of IS for decreasing the incidence of PPCs following cardiac or upper abdominal surgery.

Overend 2001 Chest
10.1378/chest.120.3.971

Kinésithérapie respiratoire

Incentive Spirometry for Prevention of Postoperative Pulmonary Complications After Thoracic Surgery

Prasanti A Kotta and Jason M Ali

Respiratory Care February 2021, 66 (2) 327-333; DOI: https://doi.org/10.4187/respcare.07972

The authors reported that there is little evidence of benefit of IS after thoracic surgery.

The authors concluded that their findings did not support the addition of IS to the postoperative care of patients who underwent pulmonary resection.

The authors found no significant difference in post-operative lung function, frequency of PPCs, or length of stay between the 2 groups and concluded that their data did not support the hypothesis that IS improves recovery of lung function or reduces the incidence of PPCs

Kotti 2021 Respiratory Care
10.4187/respcare.07972

Kinésithérapie respiratoire

- Spirométrie incitative
- Désencombrement bronchique
  - Ventilation dirigée
  - PEP bouteille, Acapella

Kinésithérapie respiratoire – ventilation dirigée

Thoracic Cancer Open Access

ORIGINAL ARTICLE | Open Access

Active cycle of breathing technique may reduce pulmonary complications after esophagectomy: A randomized clinical trial

Jiudi Zhong, Siwen Zhang, Chuangzhen Li, Yi Hu, Weijin Wei, Li Liu, Ming Wang, Zhangxian Hong, Hao Long, Tiehua Rong, Hong Yang, Xiaodong Su

First published: 12 November 2021 | https://doi.org/10.1111/1759-7714.14227 | Citations: 1

Outcome	Patients ACBT (*n* = 146)	*n* (%) Control (*n* = 145)	*p* value
PPC	22(15.2)	45(31.0)	0.001
Pneumonia	6(4.1)	15(10.3)	0.044
Atelectasis	4(2.7)	9(6.2)	0.169
Hypoxia	8(5.5)	18(12.4)	0.042
ARDS	2(1.4)	6(4.1)	0.173
Anastomotic leakage	8(5.5)	18(12.4)	0.042
Arrhythmia	12(8.2)	23(15.9)	0.049
Chylothorax	2(1.4)	2(1.4)	1.000
Length of stay (days), mean (SD)	12.3(11.3)	16.8(15.4)	0.009

Zhong 2021 Thorac Cancer
10.1111/1759-7714.14227

Kinésithérapie respiratoire – PEP

Comparative efficacy of different combinations of acapella, active cycle of breathing technique, and external diaphragmatic pacing in perioperative patients with lung cancer: a randomised controlled trial

	Control (*n* = 121)	Acapella plus ACBT (*n* = 123)	EDP plus ACBT (*n* = 119)	*P*-value			
				Overall	Acapella plus ACBT vs. Control	EDP plus ACBT vs. Control	Acapella plus ACBT vs. EDP plus ACBT
Pulmonary infection, *n* (%)	8 (6.61)	4 (3.25)	3 (2.52)	- a	-	-	-
Hypoxemia, *n* (%)	13 (10.74)	8 (6.50)	5 (4.20)	-	-	-	-
Atelectasis, *n* (%)	7 (5.79)	4 (3.25)	2 (1.68)	-	-	-	-
Total, *n* (%)	28 (23.14)	16(13.01)	10(8.40)	0.005	0.040	0.002	0.248
Drainage tube removal time (hrs)	76 (53.00; 110.00)	66.50 (33.00; 92.50)	52.00 (34.00; 75.50)	< 0.001	0.002	<0.001	0.199
Postoperative hospital stays (days)	4.00 (3.00;6.00)	3.50 (2.00;5.00)	3.00 (2.00; 4.00)	< 0.001	<0.001	< 0.001	0.100

a: Not applicable.

Note: ACBT = active cycle of breathing technique; EDP = external diaphragm pacer; n = number; hrs = hours.

Chen et al. BMC Cancer (2023) 23:282
https://doi.org/10.1186/s12885-023-10750-4

Kinésithérapie respiratoire

- Spirométrie incitative
- Désencombrement bronchique
  - Ventilation dirigée
  - PEP bouteille
- Gestion de la toux
- Gestion de la douleur (gestes et postures)
- Souplesse des épaules (positionnement per opératoire)

Kinésithérapie respiratoire

- Spirométrie incitative
- Désencombrement bronchique
  - Ventilation dirigée
  - PEP bouteille
- Gestion de la toux
- Gestion de la douleur (gestes et postures)
- Souplesse des épaules (positionnement per opératoire)
- Renforcement des muscles inspiratoires

Renforcement des muscles inspiratoires

Cochrane Library

Cochrane Database of Systematic Reviews

2015

Preoperative inspiratory muscle training for postoperative pulmonary complications in adults undergoing cardiac and major abdominal surgery (Review)

Katsura M, Kuriyama A, Takeshima T, Fukuhara S, Furukawa TA

Outcomes	Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
Postoperative atelectasis original authors' definitions	**RR 0.53** (0.34 to 0.82)	443 (7 studies)	⊕⊕⊖⊖ **low** [1,2,3]	I^2 statistic = 0%, P value = 0.004
Postoperative pneumonia original authors' definitions	**RR 0.45** (0.26 to 0.77)	675 (11 studies)	⊕⊕⊕⊖ **moderate** [1,2,3,4]	I^2statistic = 0%, P value = 0.004

Katsura 2015 Cochrane 10.1002/14651858.CD010356.pub2

Renforcement des muscles inspiratoires

Effects of Preoperative Breathing Exercise on Postoperative Outcomes for Patients With Lung Cancer Undergoing Curative Intent Lung Resection: A Meta-analysis

Chan Yeu Pu, MD,[a] Hanan Batarseh, MD,[b] Michelle L. Zafron, MLS,[c] M. Jeffery Mador, MD,[b,d] Sai Yendamuri, MD,[e] and Andrew D. Ray, PT, PhD[f]

Arch Phys Med Rehabil. 2021 Dec; 102(12): 2416–2427.e4.

Breathing exercices :
- IMT (“inspiratory muscle training,” “threshold loading,” “normocapnic hyperpnoea”)
- broad range of respiratory exercises, including abdominal breathing, incentive spirometry, and thoracic expansion

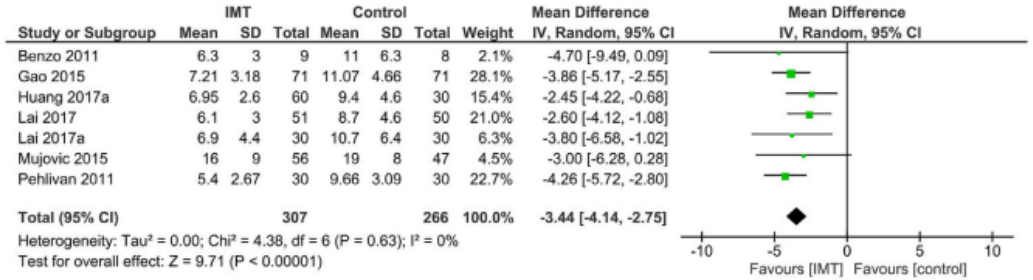


Fig 2.
Forest plot of LOS.

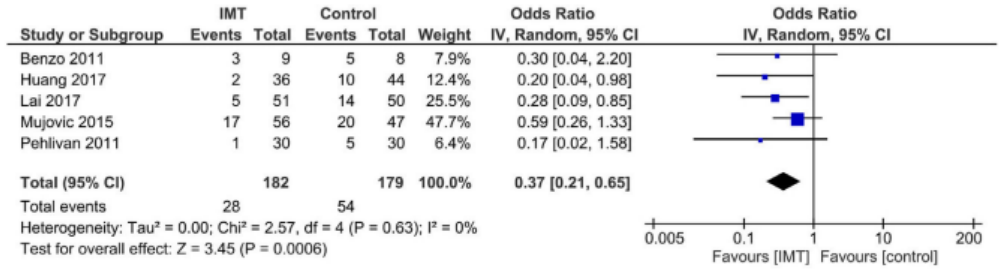


Fig 3.
Forest plot of PPC.

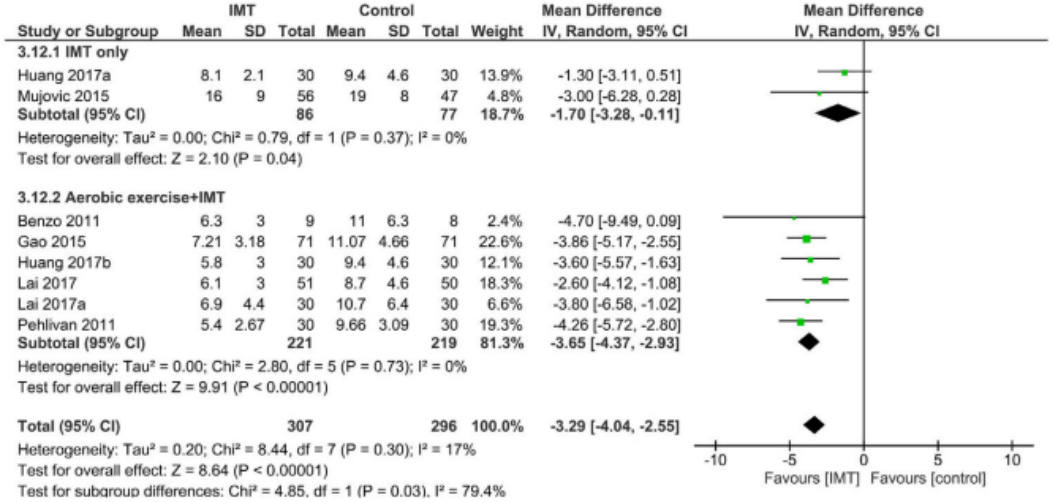


Fig 8.
Forest plot of LOS with IMT vs IMT+aerobic exercise subgroup.

Pu 2021 Arch Phys Med Rehabil 10.1016/j.apmr.2021.03.028.

Dénutrition

- Mécanismes (cancer) = réduction des apports + déplétion protéique musculaire + inflammation systémique
- Définition ?
  - IMC < 18,5 ou < 22 ?
  - Albumine < 35 g/l ?
  - Perte poids > 5% (1mois) ou 10% (6 mois) ?
  - Scores/enquêtes : MNA (Mini Nutritionnal Assessment), NRI (Nutritional Risk Index), Nutrition Risk Score (NRS2002)

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Nutrition Risk Score (NRS2002)

1. Additionner le score de dénutrition (0-3) et celui de la sévérité de la maladie (0-3).
2. Si âge >70 ans : ajouter 1 point.
3. Si score total ≥ 3 : débuter un support nutritionnel.

Dénutrition	Sévérité de la maladie
Légère (score 1) ↓ poids > 5% en 3 mois **ou** apports 50-75% des besoins	**Légère (score 1)** Maladies chroniques y compris tumeur maligne
Modérée (score 2) ↓ poids > 5% en 2 mois **ou** IMC 18,5-20,5 **ou** apports 25-50% des besoins	**Modérée (score 2)** Chirurgie abdominale majeure, AVC, maladie hématologique maligne
Sévère (score 3) ↓ poids > 5% en 1 mois (> 15% en 3 mois) **ou** IMC < 18,5 **ou** apports < 25% des besoins	**Sévère (score 3)** Traumatisme cérébral, transplantation de moelle, soins intensifs

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  - Sarcopénie ? (réduction de la force & masse)

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Dénutrition

- Mécanis
- Définitic
  - IM
  - All
  - Pe
  - Sc
  - Sa

Étape 1 — DIAGNOSTIC DE LA DÉNUTRITION

Critères phénotypiques *au moins 1 critère*

- Perte de poids ≥ 5% **en 1 mois** ou ≥ 10% **en 6 mois** ou ≥ 10% **par rapport au poids habituel** avant le début de la maladie
- IMC < **18,5 kg/m²**
  IMC < **22 kg/m²**
- Réduction quantifiée de la **masse** et/ou de la **fonction musculaire** (voir fiche dénutrition SFNCM)
  Sarcopénie confirmée (voir fiche dénutrition SFNCM)

Critères étiologiques *au moins 1 critère*

- Réduction de la prise alimentaire ≥ 50% **pendant plus d'1 semaine,** ou toute réduction pendant **plus de 2 semaines** (évaluation facilitée par l'utilisation du Score d'Evaluation Facile des Ingesta, SEFI*) par rapport à la consommation alimentaire habituelle quantifiée ou aux besoins protéino-énergétiques estimés
- Diminution de l'**absorption digestive**
- **Situations d'agression** (pathologies aiguë, chronique évolutive ou maligne évolutive)

Cas particulier de la personne obèse dénutrie : ne pas tenir compte de l'IMC

Étape 2 — DÉTERMINATION DE LA SÉVÉRITÉ DE LA DÉNUTRITION

Dénutrition modérée *1 seul critère suffit*

- Perte de poids ≥ 5% et < 10% **en 1 mois** ou ≥ 10% et < 15% **en 6 mois** ou ≥ 10% et < 15% **par rapport au poids habituel** avant le début de la maladie
- 17 < IMC < 18,5 kg/m²
  20 ≤ IMC < 22 kg/m²
- 30 < albuminémie < 35 g/l
  ou albuminémie ≥ 30 g/l
  (mesure par immunonéphélémétrie ou immunoturbidimétrie) quel que soit l'état inflammatoire

Dénutrition sévère *1 seul critère suffit*

- Perte de poids ≥ 10 % **en 1 mois** ou ≥ 15% **en 6 mois** ou ≥ 15% **par rapport au poids habituel** avant le début de la maladie
- IMC ≤ 17 kg/m²
  IMC < 20 kg/m²
- **Albuminémie** ≤ 30 g/l ou < 30 g/l
  (mesure par immunonéphélémétrie ou immunoturbidimétrie) quel que soit l'état inflammatoire

Cas particulier de la personne obèse dénutrie : ne pas tenir compte de l'IMC

IMC : Indice de masse corporelle — Adulte de 18 à 69 ans — Personne de 70 ans et plus

Critères de réduction de la masse et/ou de la fonction musculaire

MÉTHODES (1 seule suffit)	Hommes	Femmes
Force de préhension en kg (dynamomètre)*	< 26	< 16
Vitesse de marche sur 4 mètres en m/s	< 0,8	< 0,8
Indice de surface musculaire en L3 (3e vertèbre lombaire) en cm²/m² (scanner, IRM)	52,4	38,5
Indice de masse musculaire en kg/m² (bio-impédancemétrie)**	7,0	5,7
Indice de masse non grasse en kg/m² (bio-impédancemétrie)**	< 17	< 15
Masse musculaire appendiculaire en kg/m² (DEXA)	7,23	5,67

Consensus européen (EWGSOP 2019) définissant la sarcopénie confirmée comme l'association d'une réduction de la force et de la masse musculaires

RÉDUCTION DE LA FORCE MUSCULAIRE (au moins 1 critère)	Hommes	Femmes
5 levers de chaise en secondes	> 15	
Force de préhension (dynamomètre) en kg	< 27	< 16
ET RÉDUCTION DE LA MASSE MUSCULAIRE (au moins 1 critère)* **	**Hommes**	**Femmes**
Masse musculaire appendiculaire en kg	< 20	< 15
Index de masse musculaire appendiculaire en kg/m²	< 7	< 5,5

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- Prévalence ?

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Dénutrition

- Méc
- Défi
  -
  -
  -
  -
  -
- Prév

Table 1 Malnutrition point prevalence studies in oncology patients reporting malnutrition rates in lung cancer subgroups

Citation	Population	Setting	Malnutrition assessment method	Prevalence in lung patients
Mariani et al[14]	Adult cancer outpatients at diagnosis or in various stages of treatment or follow-up, N=1,556 n=229 (lung)	Outpatient cancer patients of 17 hospitals, universities or scientific institutions in Italy	Weight loss >10% of usual body weight	34.5%
Hébuterne et al[13]	Adult cancer inpatients, N=1,903 n=247 (lung)	Inpatient wards of 154 public or private hospitals in France	BMI ≤18.5 kg/m^2 (for aged 18–74) or BMI ≤21 kg/m^2 (for patients aged over 75) and/or ≤10% loss of weight from beginning of disease	45%
Segura et al[9]	Adult patients with advanced cancer at diagnosis or in various stages of treatment or follow-up, N=781 n=172 (lung)	Inpatient, outpatient or home-based care patients within the Spanish National Health System	Patient generated subjective global assessment (PG-SGA) score >9	56.4%
Read et al[12]	Adult cancer patients at first presentation, prior to chemotherapy, N=141 n=32 (lung)	Outpatient oncology clinic in two hospitals in Sydney (Australia)	PG-SGA category B or C	69%

Abbreviations: BMI, body mass index; PG-SGA, patient-generated subjective global assessment.

02)

Kiss 2016 Lung cancer

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  - Sarcopénie ? (réduction de la force & masse)
- Prévalence
  - À Aix-les-Bains (370 données)
    - Critère IMC et âge = 8%
    - Critère perte poids = 4-10%

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Dénutrition

- Chirurgie thoracique & dénutrition = augmentation du risque de PPC, de mortalité & durée de séjour
- European/American Society for Clinical Nutrition and Metabolism ESPEN/ASPEN
  - Renutrition recommandée en préopératoire si dénutrition
    - Entérale si prise orale < 60% apports recommandés malgré CNO
- Probablement pas d'intérêt des préparations enrichies en arginine, ω3, nucléotides… (immunonutrition)

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IMC et mortalité

cancers MDPI

Article

The Reality of Lung Cancer Paradox: The Impact of Body Mass Index on Long-Term Survival of Resected Lung Cancer. A French Nationwide Analysis from the Epithor Database

Marco Alifano [1,*], Elisa Daffré [1], Antonio Iannelli [2], Laurent Brouchet [3], Pierre Emmanuel Falcoz [4], Françoise Le Pimpec Barthes [5], Alain Bernard [6], Pierre Benoit Pages [6], Pascal Alexandre Thomas [7], Marcel Dahan [3] and Raphael Porcher [8]

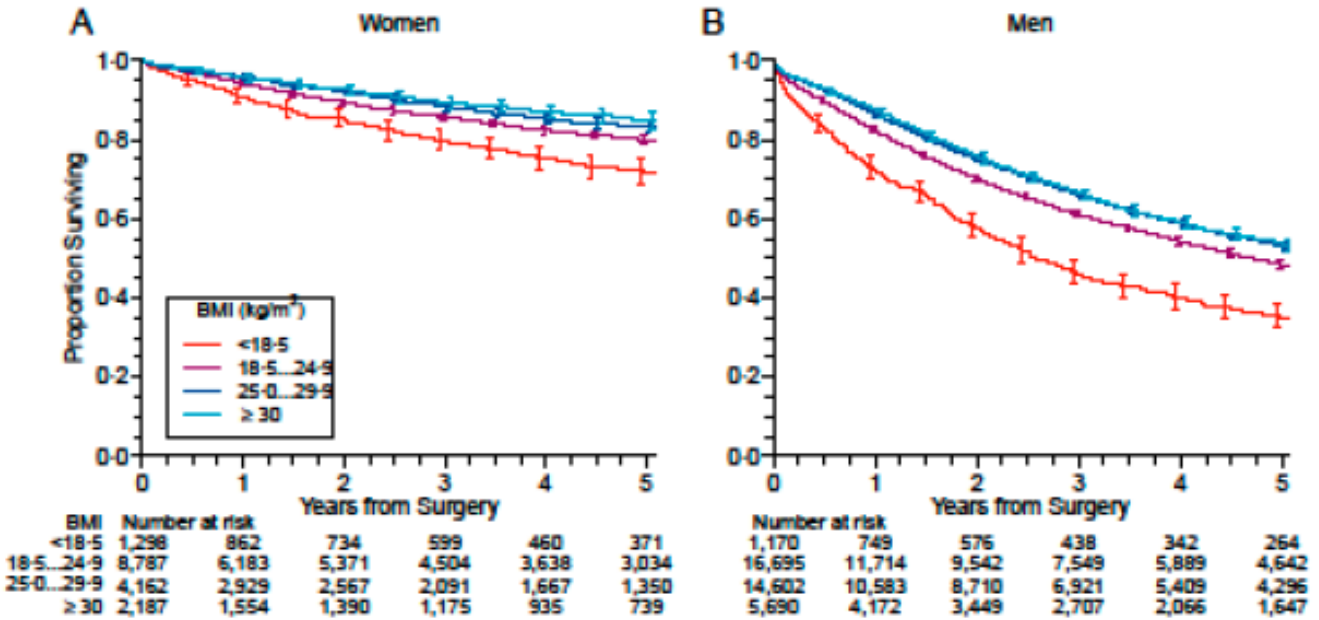


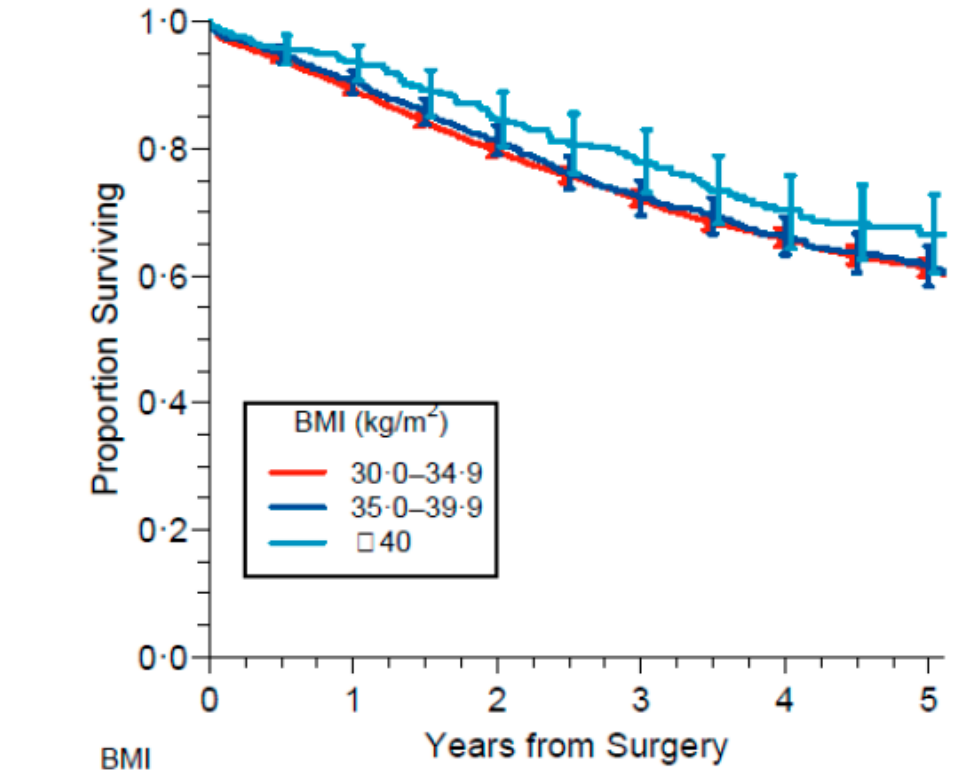
Figure 2. Kaplan–Meier survival curves of patients with resected lung cancer with respect to BMI. (**A**) Women. (**B**) Men.

54631 patients
opérés entre 2003 et 2017

34% IMC > 25
14% IMC > 30
5% IMC > 40

Alifano Cancers 2021
10.3390/cancers13184574

IMC et mortalité



BMI						
30·0–34·9	6,170	4,503	3,789	3,042	2,370	1,885
35·0–39·9	1,342	964	825	655	497	392
□40	365	259	225	185	134	109

Alifano Cancers 2021
10.3390/cancers13184574

IMC et morbidité

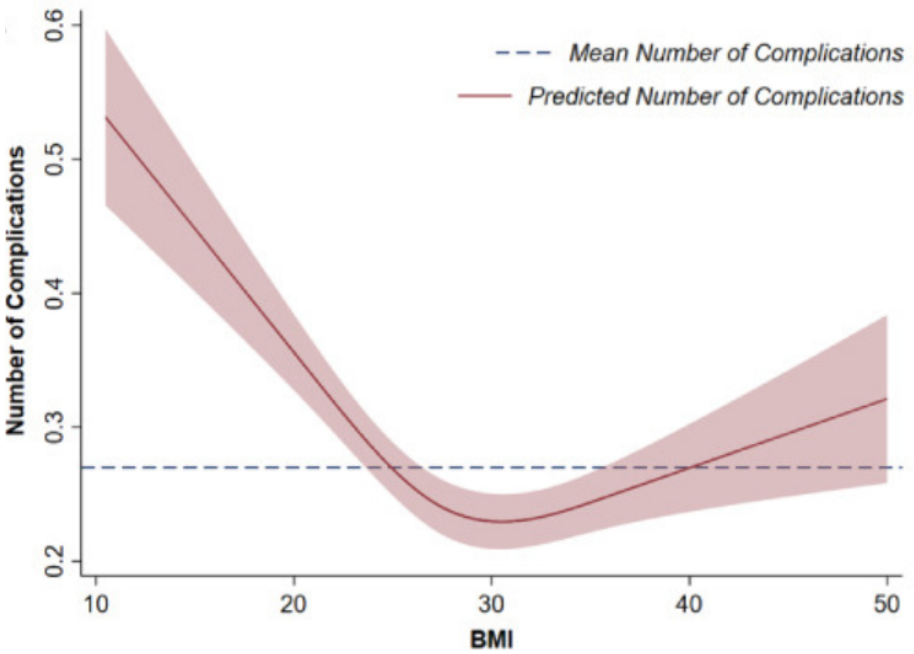
Surgery
Available online 4 August 2023
In Press, Corrected Proof What's this?

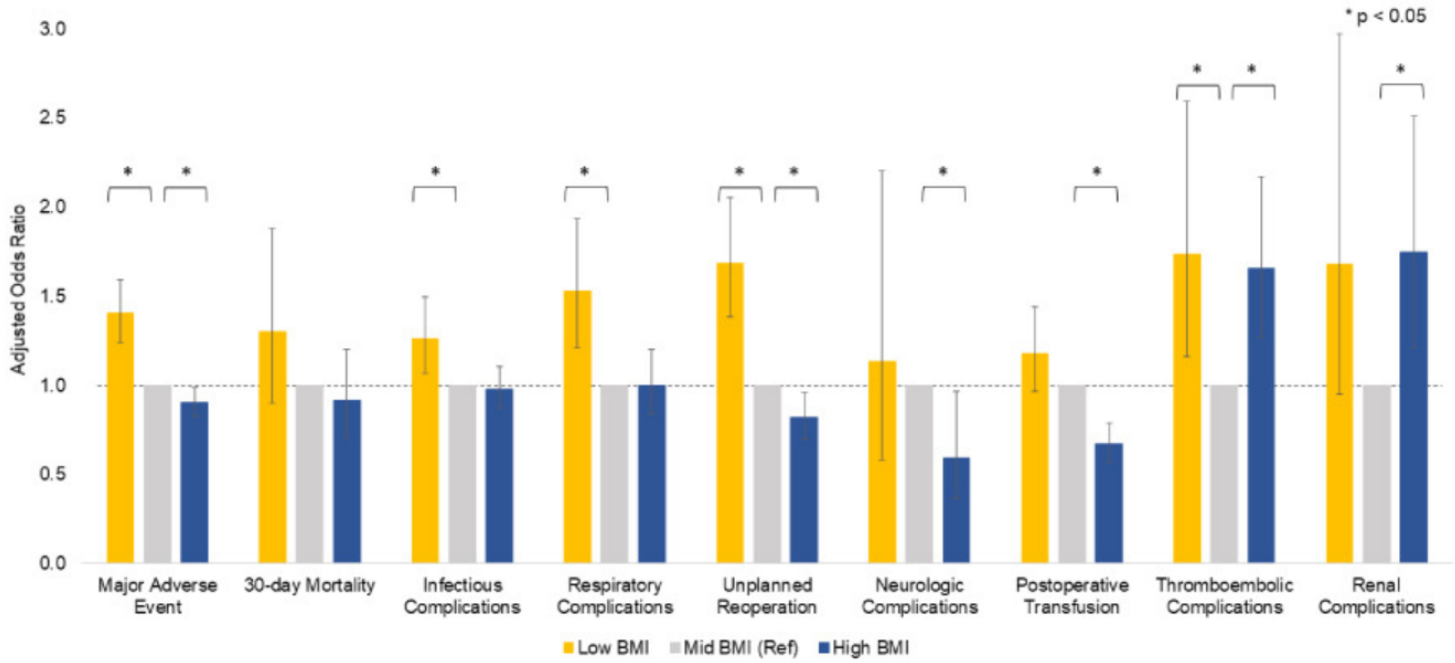
Moving beyond frailty: Obesity paradox persists in lung resection

Presented at the 18th Annual American Surgical Congress, Houston, TX, February 2023.

Amulya Vadlakonda BS [a], Nikhil Chervu MD, MS [a b], Arjun Verma BS [a],

20 099 patients opérés (résection pulmonaire), 6424 obèses





Vadlakonda 2023 Surgery
10.1016/j.surg.2023.06.035

A Matched Cohort Study of Postoperative Outcomes in Obstructive Sleep Apnea

Could Preoperative Diagnosis and Treatment Prevent Complications?

Thomas C. Mutter, M.D., F.R.C.P.C., M.Sc., Dan Chateau, Ph.D., Michael Moffatt, M.D., F.R.C.P.C., M.Sc., Clare Ramsey, M.D., F.R.C.P.C., M.S., Leslie L. Roos, Ph.D., Meir Kryger, M.D., F.R.C.P.C.

Anesthesiology 2014; 121:707-18

1571 patients sans PPC
2640 traités
16277 contrôles (« low risk »)

Table 3. Multivariate Models of Postoperative Respiratory and Cardiovascular Complications

	Respiratory Complications		Cardiovascular Complications†	
Variable*	Odds Ratio (95% Confidence Limits)	*P* Value	Odds Ratio (95% Confidence Limits)	*P* Value
OSA‡				
Overall				
Mild	1.66 (0.76–3.64)	0.21	—	—
Moderate	1.49 (0.63–3.51)	0.36	—	—
Severe	2.69 (1.58–4.57)	<0.001	—	—
Undiagnosed				
Mild	—	—	1.27 (0.28–5.83)	0.76
Moderate	—	—	1.78 (0.53–5.95)	0.35
Severe	—	—	2.70 (1.31–5.53)	0.007
Diagnosed				
Mild	—	—	0.76 (0.29–2.00)	0.58
Moderate	—	—	0.64 (0.22–1.88)	0.42
Severe	—	—	0.79 (0.38–1.65)	0.54

Table 4. Risk of Specific Respiratory and Cardiovascular Complications in Obstructive Sleep Apnea Patients *vs.* Matched Controls

Specific Complications (n)*	Odds Ratio (95% Confidence Limits)	*P* Value
Respiratory complications		
All obstructive sleep apnea *vs.* all matched controls		
Adult respiratory distress syndrome (n = 40)	3.17 (1.68–5.98)	<0.001
Respiratory failure (n = 27)	2.28 (1.04–4.99)	0.04
Bacterial pneumonia (n = 34)	0.66 (0.26–1.67)	0.39
Aspiration pneumonia (n = 14)	1.55 (0.49–4.94)	0.46
Cardiovascular complications		
Undiagnosed obstructive sleep apnea *vs.* matched controls		
Cardiac arrest and shock (n = 34)	2.40 (1.22–4.72)	0.01
Acute coronary syndrome (n = 10)	0.97 (0.20–4.74)	0.97
Atrial fibrillation and flutter (n = S†)	0.97 (0.11–8.67)	0.98
Cerebral vascular accident (n = 12)	0.35 (0.05–2.70)	0.31
Diagnosed obstructive sleep apnea *vs.* matched controls		
Cardiac arrest and shock (n = 40)	0.82 (0.38–1.78)	0.61
Acute coronary syndrome (n = 37)	0.60 (0.24–1.50)	0.27
Atrial fibrillation and flutter (n = 11)	0.86 (0.19–3.99)	0.85
Cerebral vascular accident (n = 19)	0.21 (0.03–1.61)	0.13

Mutter 2014 Anesthesiology
10.1097/ALN.0000000000000407

The Journal of Thoracic and Cardiovascular Surgery • October 2020

Assessment of preoperative noninvasive ventilation before lung cancer surgery: The preOVNI randomized controlled study

Nicolas Paleiron, MD,[a,b] Frédéric Grassin, MD,[c] Christophe Lancelin, MD,[d] Cécile Tromeur, MD,[b] Jacques Margery, MD, PhD,[e] Claudia Natale, MD,[a] and Francis Couturaud, MD, PhD,[b] the GFPC Group*

Etude multicentrique (14 centres), française
146/151 patients VNI/contrôle

Paleiron J Tho Card Surg 2020
10.1016/j.jtcvs.2019.09.193

TABLE 4. Primary endpoint: postoperative cardiorespiratory complications within 1 month after surgery in the preOVNI study

	No-NIV group (n = 146)	NIV group (n = 151)	*P* value*
Primary endpoint			
Postoperative cardiorespiratory complications, n (%)	62 (44.6)	62 (42.8)	.75
Missing	8	8	
Components of the composite primary endpoint, n (%)			
Pneumonia or lower respiratory tract infection	52 (37.7)	40 (28.0)	.08
Atelectasis	18 (13.2)	17 (12.3)	.82
Hypoxemic and/or hypercapnic acute respiratory insufficiency	21 (15.3)	20 (14.1)	.77
Prolongation of postoperative intubation >24 h	2 (1.5)	0 (0)	.25
Acute heart failure	3 (2.2)	8 (5.7)	.14
De novo atrial fibrillation	14 (10.3)	18 (13.1)	.47
Death	4 (2.9)	7 (4.8)	.39
Other complications			
Myocardial infarction	1 (0.7)	2 (1.4)	1.00
Bronchial fistula	0	1 (0.7)	1.00
Acute myocardial ischemia	3 (2.2)	8 (5.7)	.14
Confused postoperative state	9 (6.7)	5 (3.6)	.25
Postoperative venous thromboembolism	0 (0)	1 (0.7)	1.0
Pneumothorax	17 (12.6)	15 (10.9)	.66
Pneumomediastinum	1 (0.7)	1 (0.7)	1.00
Subcutaneous emphysema	13 (9.6)	17 (12.4)	.46
Pleurisy	6 (4.4)	8 (5.8)	.59
Hospital stay, d	11.5 (6.4)	11.9 (8.7)	.44
ICU stay, d	6.3 (6.6)	5.9 (7.0)	.45
Air leak duration, d	2.7 (3.8)	2.3 (3.5)	.26

No difference was found for the primary endpoint and the secondary endpoints. *NIV*, Noninvasive ventilation; *ICU*, intensive care unit. *χ^2 test.

Paleiron J Tho Card Surg 2020
10.1016/j.jtcvs.2019.09.193

Bronchodilatation

SCIENTIFIC REPORTS
nature research

Sci Rep. 2021; 11: 8359.
Published online 2021 Apr 16. doi: 10.1038/s41598-021-86791-1
PMCID: PMC8052420
PMID: 33863912

Effect of perioperative bronchodilator therapy on postoperative pulmonary function among lung cancer patients with COPD

Sun Hye Shin,[#1] Sumin Shin,[#2] Yunjoo Im,[#1] Genehee Lee,[3] Byeong-Ho Jeong,[1] Kyungjong Lee,[1] Sang-Won Um,[1] Hojoong Kim,[1] O. Jung Kwon,[1] Jong Ho Cho,[2] Hong Kwan Kim,[2] Yong Soo Choi,[2] Jhingook Kim,[2] Jae Ill Zo,[2] Young Mog Shim,[2] Juhee Cho,[4] Danbee Kang,[✉#4] and Hye Yun Park[✉#1]

Amélioration de la fonction respiratoire (BPCO)

	No perioperative bronchodilator (N = 156)	Perioperative Bronchodilator (N = 112)	*P* value
Postoperative pulmonary complication (PPC)			
No. of patients (%)	26 (16.7)	16 (14.3)	0.597
Adjusted* OR (95% CI)	Reference	0.58 (0.27, 1.25)	0.162
Postoperative cardiovascular complication (PCC)			
No. of patients (%)	20 (12.8)	17 (15.2)	0.581
Adjusted* OR (95% CI)	Reference	1.05 (0.49, 2.27)	0.899
PPC or PCC			
No. of patients (%)	37 (23.7)	28 (25.0)	0.809
Adjusted* OR (95% CI)	Reference	0.86 (0.46, 1.60)	0.632
Hospital length of stay, days	8.6 (4.4)	9.6 (6.0)	0.120
ICU length of stay, days	1.2 (1.1)	1.2 (0.9)	0.926
ICU readmission during hospitalization for surgery, n (%)	4 (2.6)	5 (4.5)	0.498

Shin 2021 Sci Rep

Durée du stage

Délai avant la chirurgie : moyennes françaises

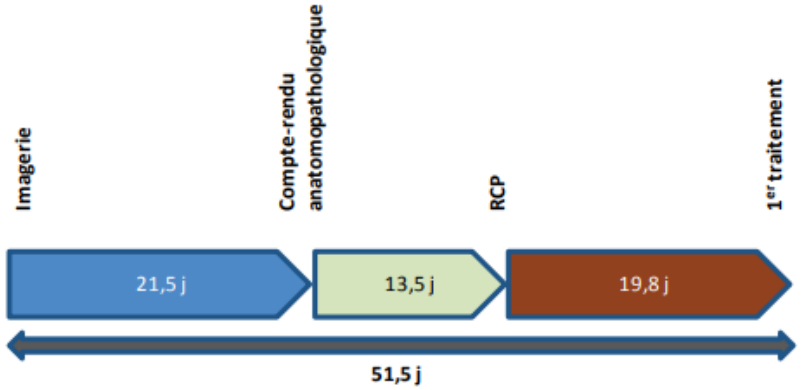
Analyse des délais de prise en charge des cancers thoraciques : étude prospective

Leveque 2014 RMR

Délai entre la RCP et le ttt = 26 jours

Étude sur les délais de prise en charge des cancers du sein et du poumon
DANS PLUSIEURS RÉGIONS DE FRANCE EN 2011

INCa 2011



Délai avant la chirurgie: impact sur la survie ?

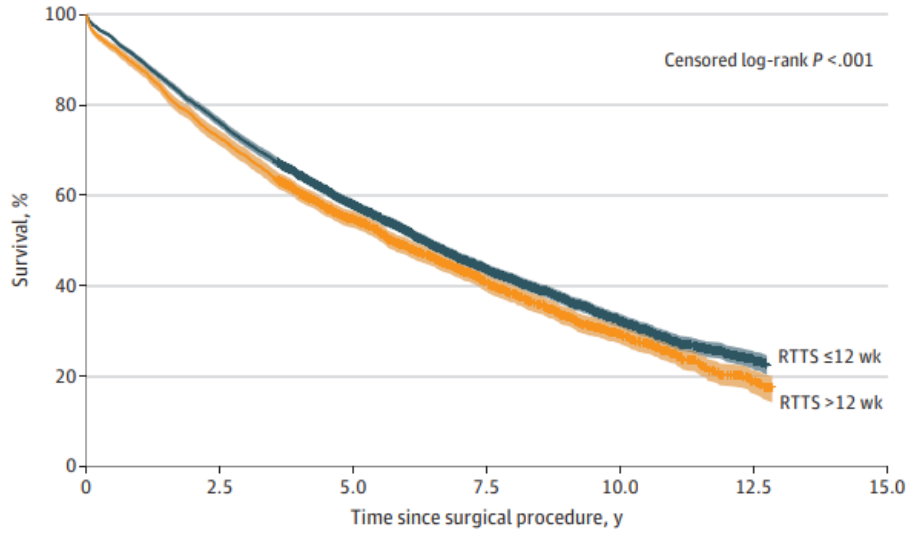
JAMA Network Open

Original Investigation | Surgery

Analysis of Delayed Surgical Treatment and Oncologic Outcomes in Clinical Stage I Non–Small Cell Lung Cancer

Brendan T. Heiden, MD; Daniel B. Eaton Jr, MPH; Kathryn E. Engelhardt, MD, MS; Su-Hsin Chang, PhD, SM; Yan Yan, MD, PhD; Mayank R. Patel, MD; Daniel Kreisel, MD, PhD; Ruben G. Nava, MD; Bryan F. Meyers, MD, MPH; Benjamin D. Kozower, MD, MPH; Varun Puri, MD, MSCI

Figure 3. Overall Survival Following Delayed Surgical Treatment



9904 patients
Cut-off 2,5 mois
HR = 1.132

SCIENTIFIC REPORTS
nature research

Sci Rep. 2021; 11: 4914.
Published online 2021 Mar 1. doi: 10.1038/s41598-021-84162-4
PMCID: PMC7921130
PMID: 33649361

Delay to surgical treatment in lung cancer patients and its impact on survival in a video-assisted thoracoscopic lobectomy cohort

Florian Ponholzer,[1] Veronika Kroepfl,[1] Caecilia Ng,[1] Herbert Maier,[1] Florian Kocher,[2] Paolo Lucciarini,[1] Dietmar Öfner,[1] and Florian Augustin[✉1]

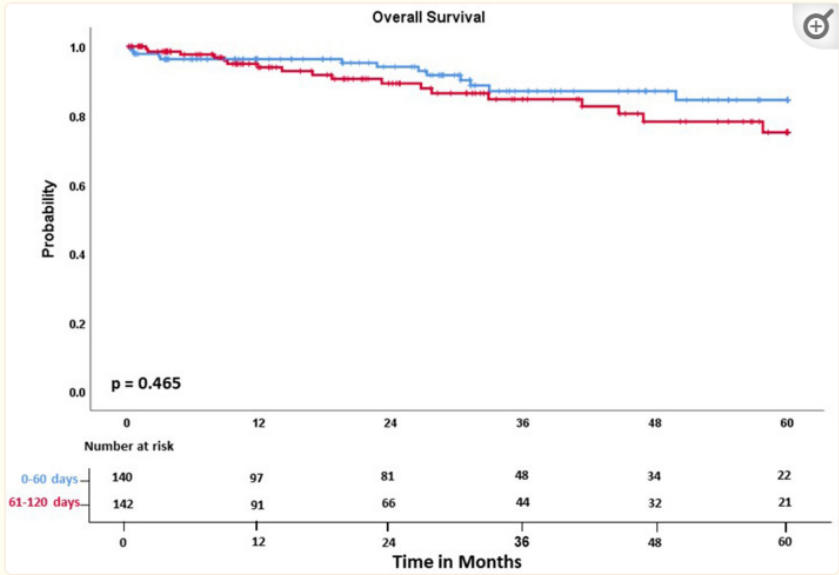


Figure 2

Overall survival for all patients did not show any difference between group A and B.

287 patients
Cut-off 2 mois entre imagerie et chir
p<0,05 pour cT2 85/60% à 5 ans

Ponholzer 2021 Sc Reports
Heiden 2021 JAMA Netw Open

Délai avant la chirurgie: impact sur la survie ?

[Thoracic Oncology CHEST Reviews]

CHEST

Impact of Delays in Lung Cancer Treatment on Survival

Paula Valeria Sainz Zuniga, BS; and David E. Ost, MD, MPH

The effect of delay on survival probably varies by stage. The impact of delays is lowest for subcentimeter nodules, probably highest in stage II disease, and low in patients who are only eligible for palliative care. Precise quantification of the impact of delay is not currently possible.

Zuniga 2021 Chest

Faut-il retarder la chirurgie ?

Impact d'un programme court de Réhabilitation Respiratoire ambulatoire avant chirurgie thoracique carcinologique

C Boulkéroua[1], F Bart[1], J Chabrol[1], B Wallaert[2], JM Grosbois[1 3]

[1] CH Béthune, Service de pneumologie et de Réhabilitation, F-62400 Béthune, France [2] CHU Lille, Service de Pneumologie et Immuno-Allergologie, Centre de Compétence pour les Maladies Pulmonaires Rares, Univ. Lille, F-59000 Lille, France [3] FormAction Santé, F-59840 Pérenchies, France

19 patients
VO_2pic (moyenne) = 12,5 +/- 1,6

3h x 5/sem pendant 4 semaines

11 patients (57,9%) sont devenus opérables (VO_2 > 15 ml/min/kg)

Combien de temps de RR

Short-term inpatient-based high-intensive pulmonary rehabilitation for lung cancer patients: is it feasible and effective?

Exercices aérobies, 30'/jour
Renforcement des muscles inspiratoires 3x 20min/j
} pendant 7 jours

Table 4 PPCs rate in 30 days between the PR and NPR groups

Outcome variables	PR group, n=197	NPR group, n=742	P
PPCs rate	36 (18.3)	194 (26.1)	0.022
Grade II			
Pneumonia	22 (11.2)	128 (17.3)	0.024
Atelectasis needing bronchoscope	13 (6.6)	91 (12.3)	0.038
Air leak ≥7 days	16 (8.1)	62 (8.4)	0.916

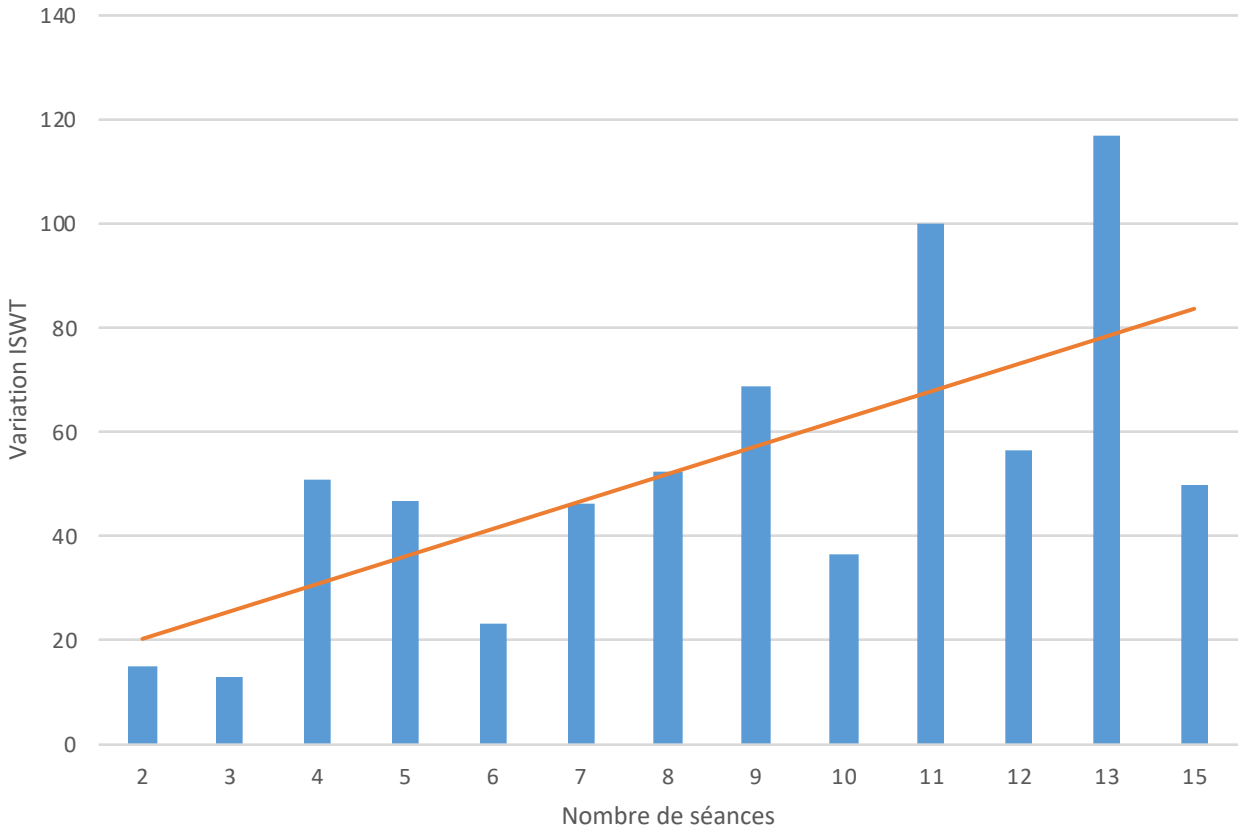
Zhou 2017 J Thoracic Disease 10.21037/jtd.2017.10.105

Combien de séances ?

Données personnelles
Variation du test navette incrémental

N=86

2 séances par semaine



À retenir

À retenir

- 25-40% de complications post-opératoires
- Effet de la RR = Réduction des complications, de la durée de séjour, augmentation du VO_2max (opérabilité)
- Ce qui est certain : APA, santé dentaire, kiné respi
- La RR ne doit pas retarder la chirurgie
- La RR doit retarder la chirurgie : si fonctionnellement inopérable ?
- Un peu, c'est mieux que rien
- Cet exposé était vraiment génial !
- Systématiser la prise en charge en RR préopératoire pour éviter la perte de chance