



e-CPLF 2021

vendredi 29 janvier 2021

Prise en charge de la pleurésie en Kinésithérapie Respiratoire



25^e CPLF

CONGRÈS DE PNEUMOLOGIE
DE LANGUE FRANÇAISE

e-CPLF 2021

vendredi 29 janvier 2021

Déclaration des liens d'intérêts

J'ai actuellement, ou j'ai eu au cours des trois dernières années, une affiliation ou des intérêts financiers ou intérêts de tout ordre avec les sociétés commerciales suivantes **en lien avec la santé**.

- Liens d'intérêt :

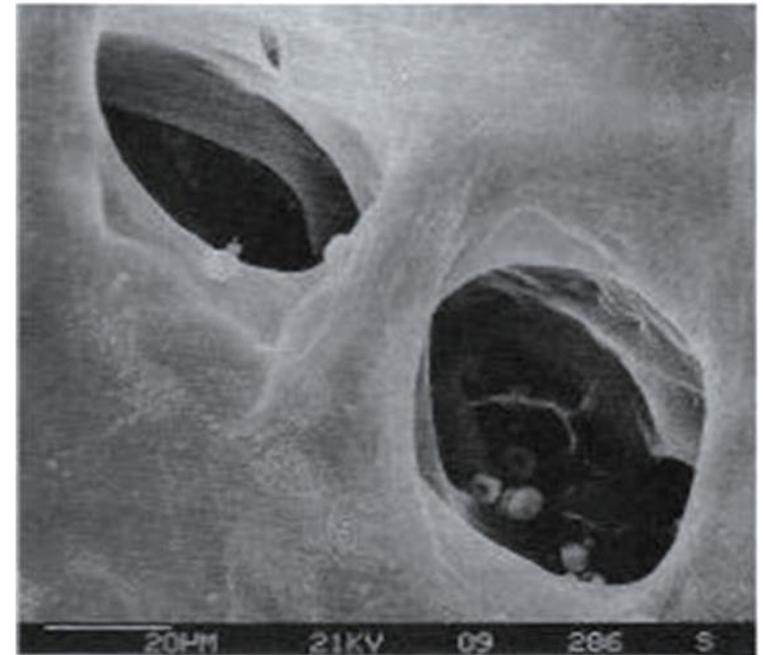
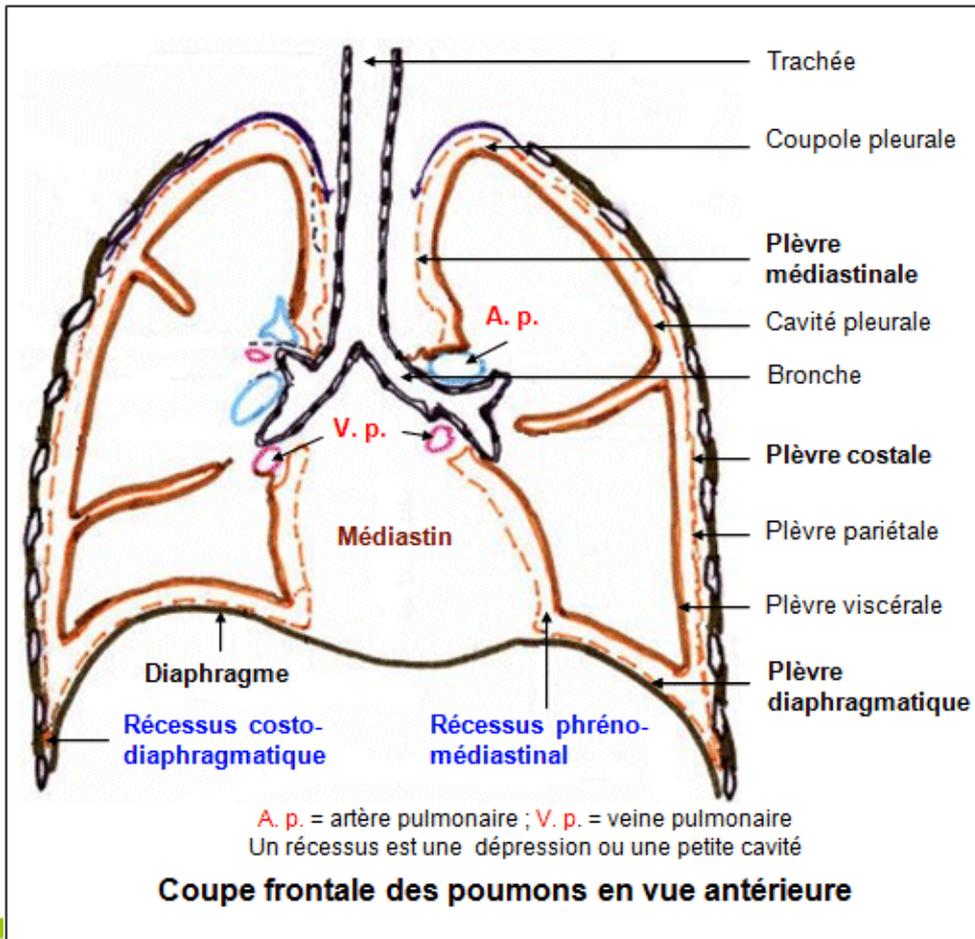
AUCUN

- Liens d'intérêt en relation avec la présentation :

AUCUN

La plèvre : rappels anatomiques

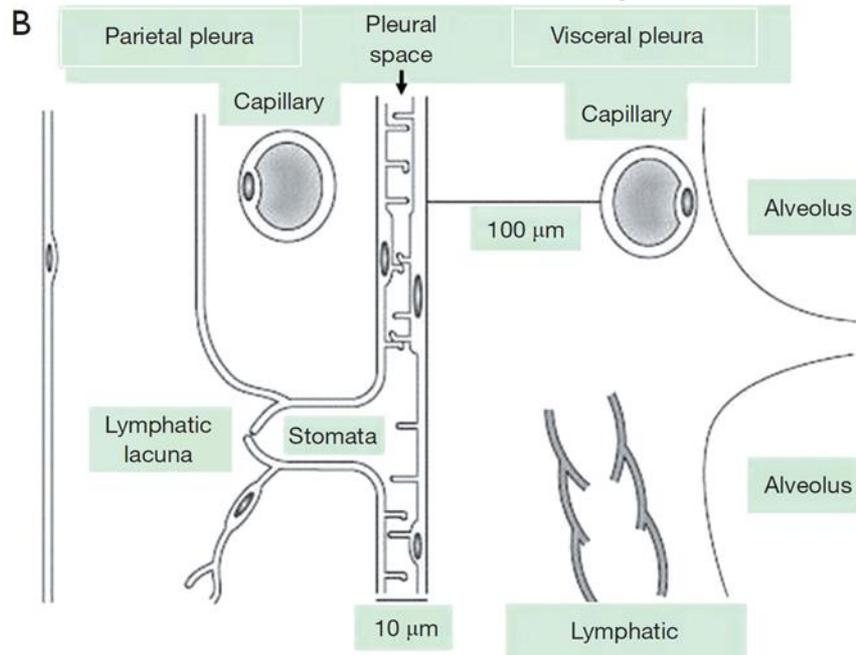
- Feuillelet viscéral
- Feuillelet pariétal très vascularisé et innervé
- Stomates lymphatiques pariétaux (Pores de Wang)



Miserocchi G, Casa Editrice Ambrosiana, *Fisiologia e Fisiopatologia Respiratoria*, Milano, 2009

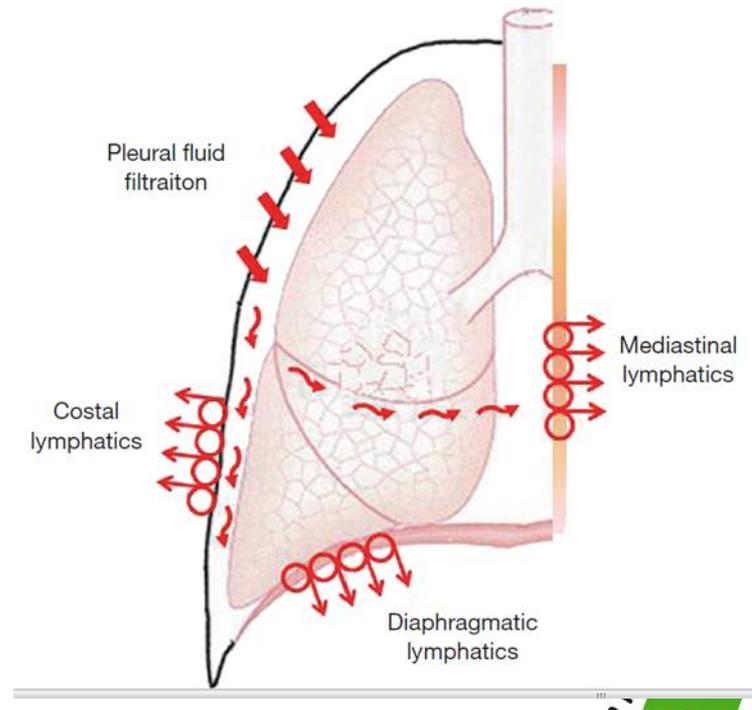
La plèvre : rappels physiologiques

- Espace pleural contenant le liquide pleural (entre 0,2 et 0,5 ml/kg)
- Rôle essentiel dans la mécanique respiratoire
- Pression intra-pleurale négative



Miserochi G, *Fisiologia e Fisiopatologia Respiratoria*, Casa Editrice Ambrosiana, Milano, 2009

- Renouvellement du liquide pleural: filtration et drainage
- Influence des mouvements respiratoires sur le drainage



Pompili C, Miserochi G, *J thorax dis*, 2016)

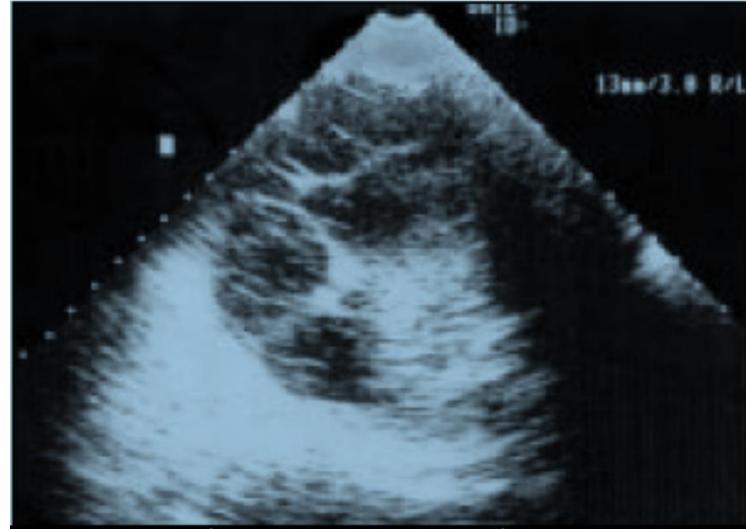
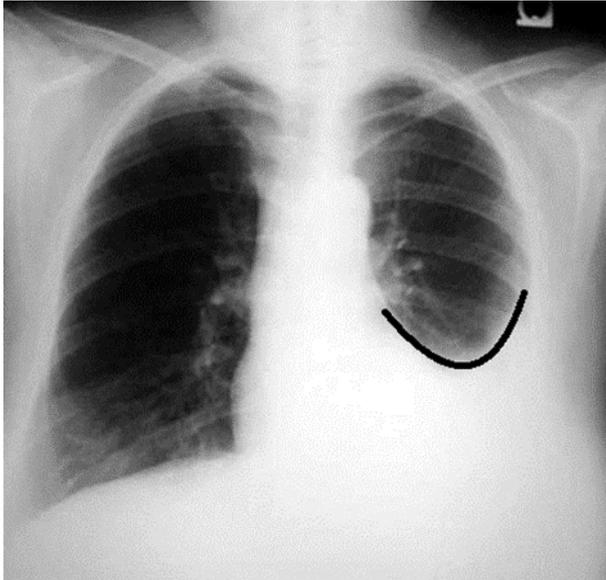
Epanchements pleuraux infectieux: de quoi parle-t-on ?

- Exsudats, ~~Transsudats~~
- Processus inflammatoire pleural
- Origines diverses: Cancer, pneumonie, tuberculose...
- Facteurs favorisants : diabète, alcoolisme, atteinte bronchique chronique, mauvais état dentaire...

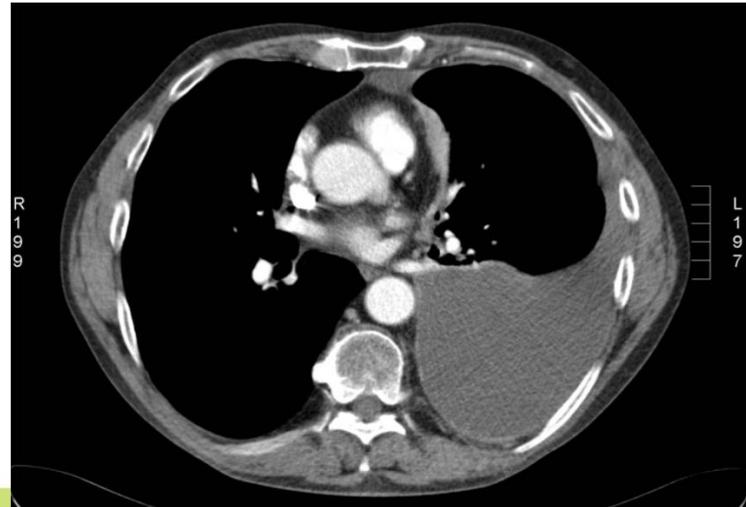
Clinique

- Apparition brutale ou progressive
- Douleur thoracique
- Dyspnée
- Diminution de l'ampliation thoracique
- Fièvre
- Matité à la percussion
- Auscultation: diminution ou abolition du murmure vésiculaire, frottement pleural

Paraclinique

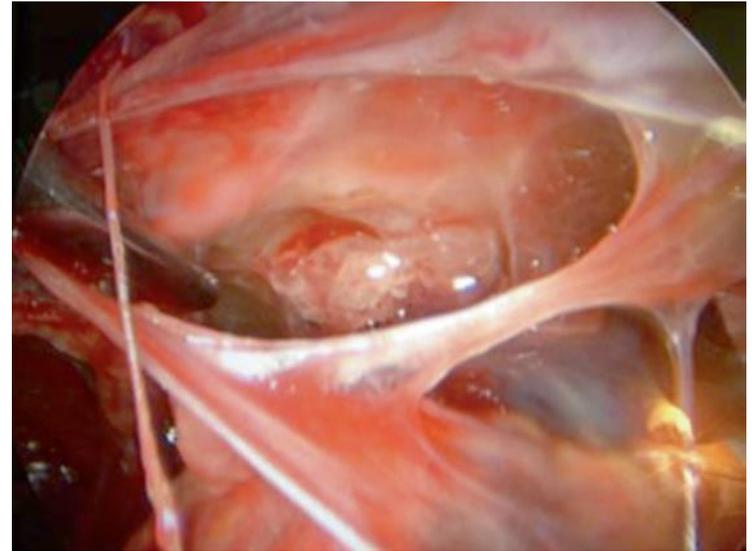


- Ponction pleurale
- Biopsie pleurale



Evolution

- **J1 – J3** : Phase exsudative
- **J4 – J14**: Phase fibrino purulente
- **J15 – J21**: Phase d'enkystement



Revue des Maladies Respiratoires Actualités – 2013

Evolution vers une pachypleurite nécessitant le recours à une décortication chirurgicale.

- **Syndrome restrictif permanent**
- **Importance d'une prise en charge rapide**

Traitement



British Thoracic Society

JNI 19th Journées
Nationales
d'Infectiologie
du mercredi 13 au vendredi 15 juin 2018
Cité des Congrès de Nantes



Nantes
et la région Pays de la Loire



- Antibiothérapie
- Ponctions itératives ou drainage
- Fibrinolytiques
- Lavages au sérum physiologique
- Traitement chirurgical
- ***Et la kinésithérapie ?***

Quelle prise en charge en kinésithérapie ?

Les objectifs

Phase liquidienne

- Lutter contre la douleur
- Favoriser la résorption du liquide pleural
- Prévenir la formation de brides pleurales
- Corriger la statique vertébrale

Phase post-liquidienne

- Récupérer l'ampliation thoracique
- Lutter contre la formation des brides pleurales

Précoce

Pendant plusieurs mois

Quelles techniques ? Quelle efficacité ?

Quelle prise en charge en kinésithérapie ?

La littérature



British Thoracic Society



ELSEVIER

Gosset-Woimant M. Facteurs pronostics d'échec du traitement médical d'une pleurésie purulente drainée [Thèse d'exercice] 2009.

Revue des Maladies Respiratoires (2015) 32, 344–357



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REVUE GÉNÉRALE

Les épanchements pleuraux parapneumoniques : épidémiologie, diagnostic, classification, traitement

Parapneumonic pleural effusions: Epidemiology, diagnosis, classification and management

J. Letheulle^{a,*}, M. Kerjouan^b, F. Bénézit^b,
B. De Latour^c, P. Tattevin^a, C. Piau^d, H. Léna^b,
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^c Service de pneumologie, Hôpital André-Mignot, 177, rue de Versailles, 78150 Le Chesnay, France

Pleurésies purulentes - 08/07/11
[6-041-A-40] - Doi : 10.1016/S1155-195X(11)58062-4

A. Ferre, M. Dres, R. Azarian *
Service de pneumologie, Hôpital
André Mignot, 177, rue de Versailles,
78157 Le Chesnay cedex, France

clair - 07/09/15

ud, AP-HP, 78, rue du

JNI 19^{es} Journées
Nationales
d'Infectiologie

du mercredi 13 au vendredi 15 juin 2018
Cité des Congrès de Nantes



Nantes
et la région Pays de la Loire



Kinésithérapie dans les pleurésies infectieuses :

Thorax
AN INTERNATIONAL JOURNAL OF RESPIRATORY MEDICINE

BTS Pleural Disease Guideline 2010

British Thoracic Society
Pleural Disease Guideline Group

CHEST[™]

AMERICAN COLLEGE
of CHEST PHYSICIANS

consensus statement

Medical and Surgical Treatment of
Parapneumonic Effusions*

An Evidence-Based Guideline



19^{es} JNI, Nantes, du 13 au 15 juin 2018

Pr Claire Andréjak



Pontoise

Quelle prise en charge en kinésithérapie ?

Les études

The effects of a physiotherapy programme on patients with a pleural effusion: a randomized controlled trial

G Valenza-Demet, MC Valenza, I Cabrera-Martos, I Torres-Sánchez and F Revelles-Moyano

Clin Rehabil published online 14 April 2014

104 patients

Clinical messages

- A physiotherapy treatment based on mobilizations, deep breathing exercises and incentive spirometry, added to the standard treatment is feasible for patients with a pleural effusion, increasing the pulmonary function and reducing the hospital stay.
- There is an evidence of radiographic benefit of treatment with physiotherapy in patients with pleural effusion, decreasing the severity of this condition.

Variables	Intervention group (n=52)	Control group (n=49)	P-value
Sex	15 (28.84)	19 (38.77)	0.072
n (%) males			
Age (years) mean ± SD	56.4 ± 16.2	57.04 ± 17.0	0.683
Weight (kg) (mean ± SD)	68.3 ± 13.03	67.6 ± 13.2	0.741
Height (cm) (mean ± SD)	164 ± 22.14	166.8 ± 15.3	0.322
BMI (kg/cm ²) (mean ± SD)	25 ± 11.9	27.5 ± 18.3	0.567
Effusion side, n (%):			0.188
Right side	19 (36.5)	16 (32.65)	
Left side	28 (53.8)	29 (59.18)	
Bilateral	5 (9.7)	4 (8.27)	
Type of pleural effusion, n (%):			0.206
Malignancy	25 (48.07)	23 (46.93)	
Parapneumonia	11 (21.15)	9 (18.36)	
Tuberculosis	8 (15.38)	6 (12.24)	
Other exudates	5 (9.61)	7 (14.28)	
Transudates	3 (5.82)	4 (8.19)	
Severity of pleural effusion (mean ± SD)	4.84 ± 1.73	4.79 ± 1.61	0.810
Drainage n (%)	31 (59.62)	29 (59.18)	0.859
Spirometric values (% predicted values) (mean±SD):			0.667
FVC	73.1 ± 12.6	72.7 ± 13.1	
FEV ₁	72.13 ± 13.7	72.5 ± 11.8	
FEF 25-75%	64.8 ± 35.1	61.8 ± 30.2	

Quelle prise en charge en kinésithérapie ? Les études

Journal of Physiotherapy 66 (2020) 19–26



Journal of
PHYSIOTHERAPY

journal homepage: www.elsevier.com/locate/jphys

Research

Adding positive airway pressure to mobilisation and respiratory techniques hastens pleural drainage: a randomised trial

Elinaldo da Conceição dos Santos ^{a,b}, Juliana de Souza da Silva ^b, Marcus Titus Trindade de Assis Filho ^b,
Marcela Brito Vidal ^b, Moisés de Castro Monte ^c, Adriana Cláudia Lunardi ^{a,d}

^a Master and Doctoral Program in Physical Therapy, Universidade Cidade de São Paulo; ^b Department of Biological and Health Sciences, Universidade Federal do Amapá;

^c Department of Physical Therapy, Faculdade de Macapá, Macapá; ^d Department of Physical Therapy, School of Medicine, Universidade de São Paulo, São Paulo, Brazil



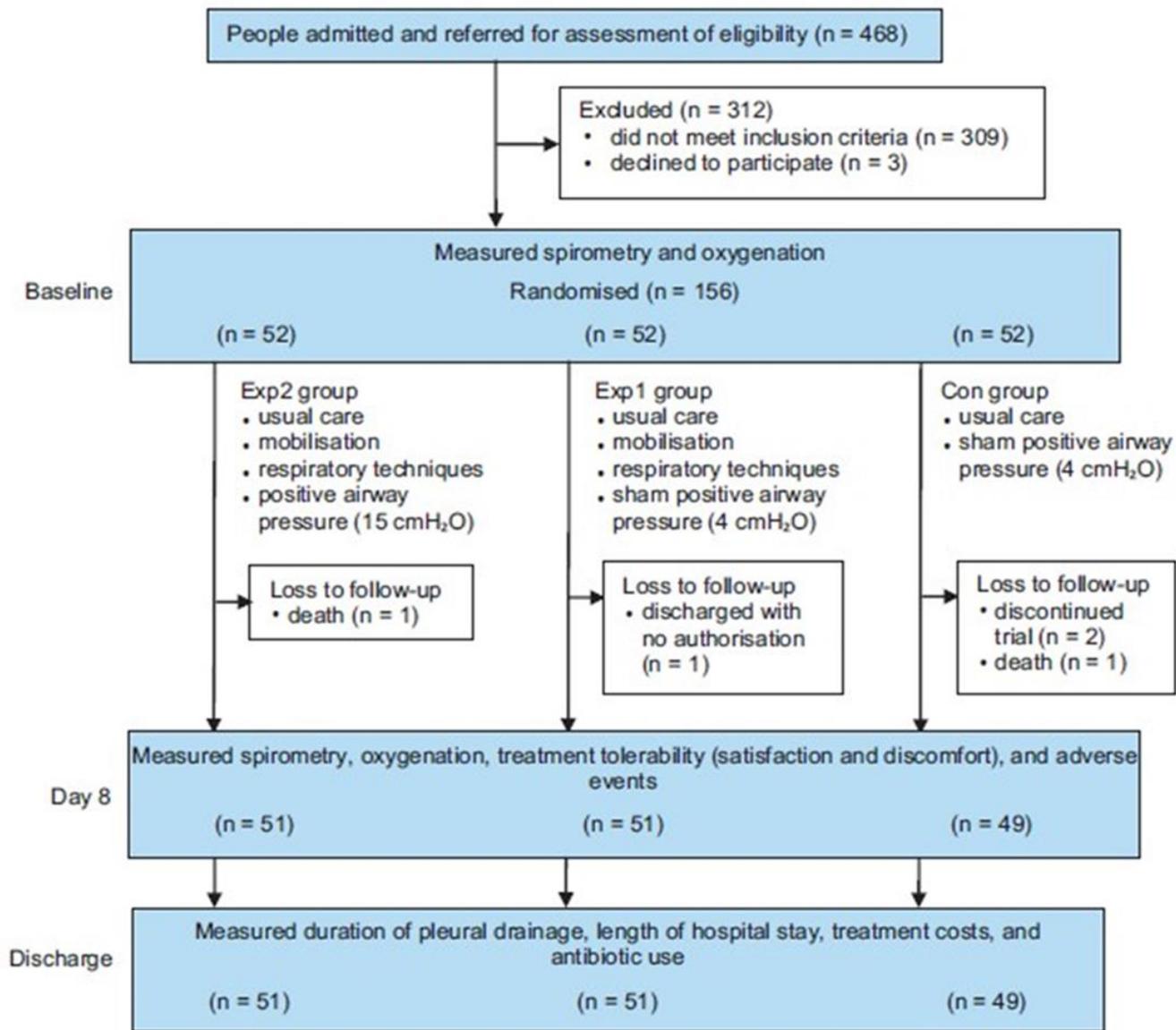


Figure 1. Design and flow of participants through the trial. Note that data obtained before loss to follow-up were included in the analysis for some outcomes. Exp2 = experimental group 2, Exp1 = experimental group 1, Con = control group.

Median (IQR) of each group, pairwise differences in ranks, and statistical significance of the pairwise comparisons.

Outcome	Groups			Difference in ranks (<i>p</i> value)		
	Exp2 (n = 51)	Exp1 (n = 52)	Con (n = 49)	Exp2 versus Con	Exp2 versus Exp1	Exp1 versus Con
Duration of drainage (d)	4 (3 to 4)	4 (3 to 6)	5 (3.5 to 7)	32.25 (< 0.05)	23.59 (< 0.05)	8.66 (> 0.05)
Length of hospital stay (d)	4 (3 to 4)	5 (3 to 7)	6 (4 to 9.5)	35.89 (< 0.05)	24.36 (< 0.05)	11.52 (> 0.05)
Treatment cost (R\$)	2671.41 (2021.41 to 3321.41)	3933.96 (2680.00 to 6528.21)	4067.45 (2440.47 to 6537.69)	24.33 (< 0.05)	32.64 (< 0.05)	8.32 (> 0.05)

Con = control group (usual care plus sham positive pressure), Exp1 = experimental group 1 (usual care plus mobilisation and respiratory interventions and sham positive pressure), Exp2 = experimental group 2 (usual care plus mobilisation and respiratory interventions and sham positive pressure), R\$ = Brazilian real.

Change scores for pulmonary function and peripheral oxygen saturation, and final scores for discomfort and satisfaction. Median (IQR) for groups and the statistical significance of the Kruskal-Wallis ANOVA.

Outcome	Groups			<i>p</i> value
	Exp2 (n = 51)	Exp1 (n = 51)	Con (n = 49)	
FEV ₁ (% pred), median (IQR)	15 (3 to 28)	6 (-2 to 17)	9 (-2 to 17)	0.23
FVC (% pred), median (IQR)	14 (5 to 33)	-2 (-16 to 9)	-6 (-27 to 8)	0.34
SpO ₂ (%), median (IQR)	0.0 (-1.0 to 1.0)	0.0 (-1.0 to 2.0)	1.0 ^b (0.0 to 2.0)	0.77
Discomfort (0 to 10), median (IQR)	6.5 ^a (3.8 to 8.0)	7.0 ^a (4.0 to 8.0)	6.0 (4.0 to 7.5)	0.37
Satisfaction (0 to 10), median (IQR)	10.0 ^a (10.0 to 10.0)	10.0 ^a (9.0 to 10.0)	10.0 (9.0 to 10.0)	0.11

Con = control group (usual care plus sham positive pressure), Exp1 = experimental group 1 (usual care plus mobilisation and respiratory interventions and sham positive pressure), Exp2 = experimental group 2 (usual care plus mobilisation and respiratory interventions and positive pressure), FEV₁ = forced expiratory volume in 1 second, FVC = forced vital capacity, SpO₂ = peripheral oxygen saturation.

^a n = 50

^b n = 51

Quelles techniques ?

Groupe Expérimental 2

- PPC 15 cmH₂O par masque naso-buccal facial, 30 mn, position assise
- Spirométrie incitative: 5 cycles de 20 répétitions
- Manœuvres de désencombrement instrumental (High Frequency Oscillator), 5 cycles de 10 répétitions
- Marche 100 m

Baseline anthropometric and demographic characteristics of the participants (n = 156).

Variables	Exp2 (n = 52)	Exp1 (n = 52)	Con (n = 52)
Gender, n male (%)	46 (88)	45 (87)	46 (88)
Age (yr), median (IQR)	32 (23 to 38)	27 (23 to 34)	27 (23 to 34)
BMI (kg/m ²), median (IQR)	25 (22 to 28)	25 (22 to 28)	24 (21 to 27)
Smoking, n (%)	24 (46)	27 (52)	25 (48)
FVC (% pred), median (IQR)	61 (44 to 80)	57 (45 to 72)	64 (51 to 79)
FEV ₁ (% pred), median (IQR)	41 (30 to 64)	46 (38 to 60)	46 (39 to 57)
SpO ₂ (%), median (IQR)	97 (96 to 98)	97 (95 to 98)	97 (95 to 98)
Cause of pleural effusion, n (%)			
trauma	48 (92)	50 (96)	48 (92)
pneumonia	2 (4)	1 (2)	3 (6)
neoplasia	2 (4)	1 (2)	1 (2)
Type of drainage used, n (%)			
unilateral	50 (96)	50 (96)	50 (96)
bilateral	2 (4)	2 (4)	2 (4)
Pain scale (0 to 10), median (IQR)	6 (5 to 8)	7.5 (5 to 9)	7 (5 to 8)

BMI = body mass index, Con = control group (usual care plus sham positive pressure), Exp1 = experimental group 1 (usual care plus mobilisation, respiratory interventions and sham positive pressure), Exp2 = experimental group 2 (usual care plus mobilisation, respiratory interventions and positive pressure), FEV₁ = forced expiratory volume in 1 second, FVC = forced vital capacity, SpO₂ = peripheral oxygen saturation, % pred = percentage predicted.

The present study had some limitations. Most participants required their intercostal drains because of thoracic trauma, so the results may be more generalisable to haemorrhagic pleural effusions and haemothoraces rather than other pleural effusions. However, the high adherence of participants to the protocol and the good effect of adding CPAP of 15 cmH₂O to more traditional respiratory interventions may indicate that the treatment can be effective in various types of pleural fluid collection. Another limitation concerns the estimation of

In conclusion, the results of this study indicate that non-invasive positive airway pressure of 15 cmH₂O added to mobilisation and respiratory care for patients with a collection of fluid in the pleural space reduces the duration of chest drainage, length of hospital stay, pulmonary complications, use of antibiotics and treatment costs. This type of intervention showed good tolerability by the patients and a low rate of adverse events; therefore, it can be safely integrated into clinical practice.

Quelle prise en charge en kinésithérapie ?

Les études

Efficacité de la kinésithérapie respiratoire pleurale non instrumentale dans la prise en charge initiale des épanchements pleuraux infectieux, étude multicentrique, randomisée et contrôlée (KINEPANCH)

Montrelay F, Boitiaux JF, Pontoise

Recruitment Status : **Recruiting**

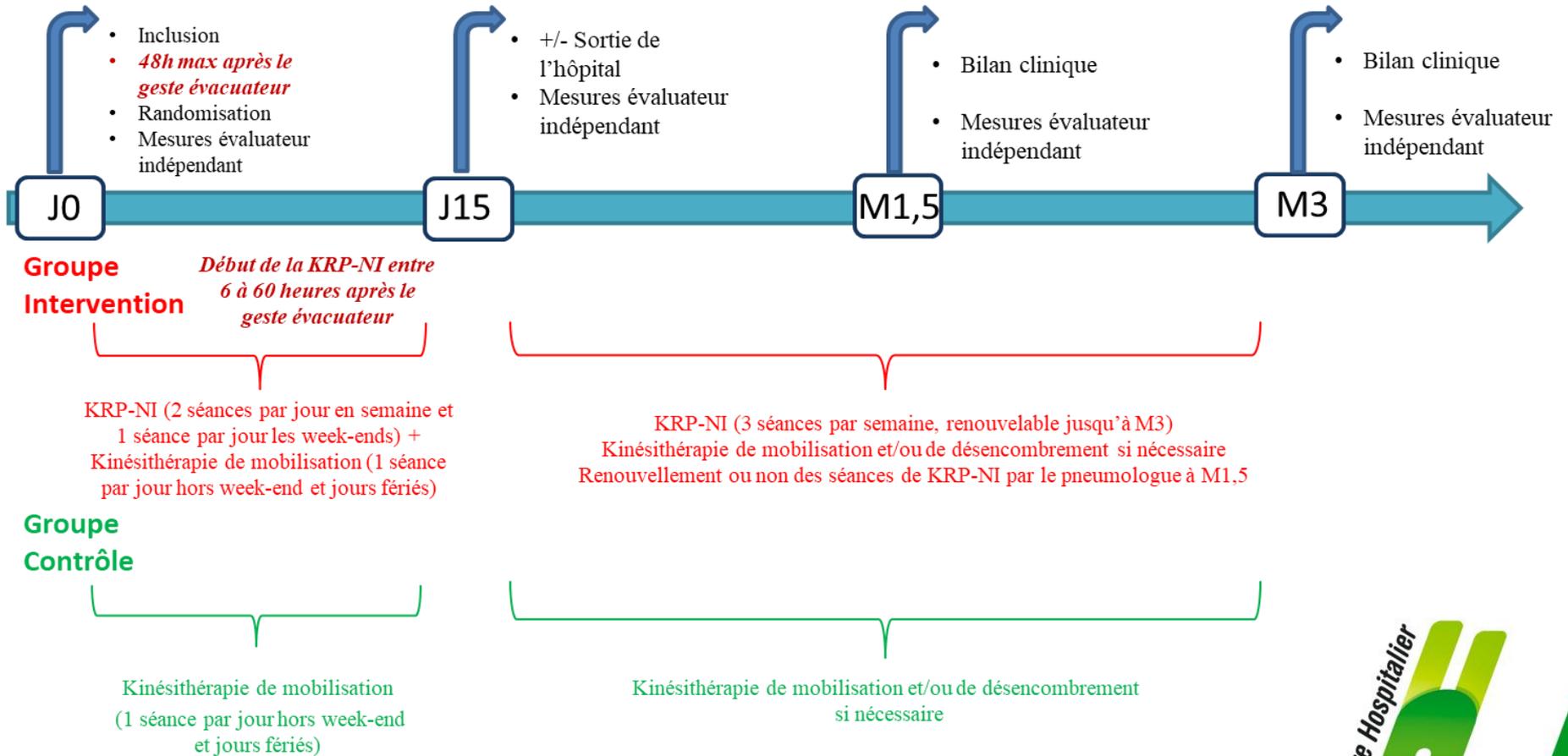
11 centres, 82 patients

Epanchements pleuraux infectieux hors cancers et tuberculose

Suivi des patients pendant 3 mois

KINEPANCH

Schéma de l'étude

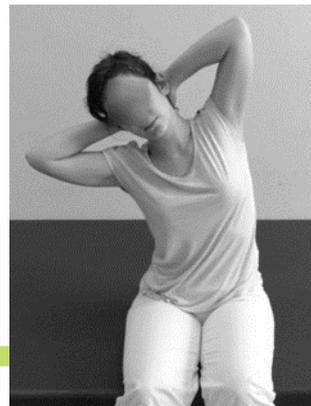


KINEPANCH: les techniques

Kinésithérapie Respiratoire Pleurale Non Instrumentale / Hospitalisation



KRP NI / En libéral



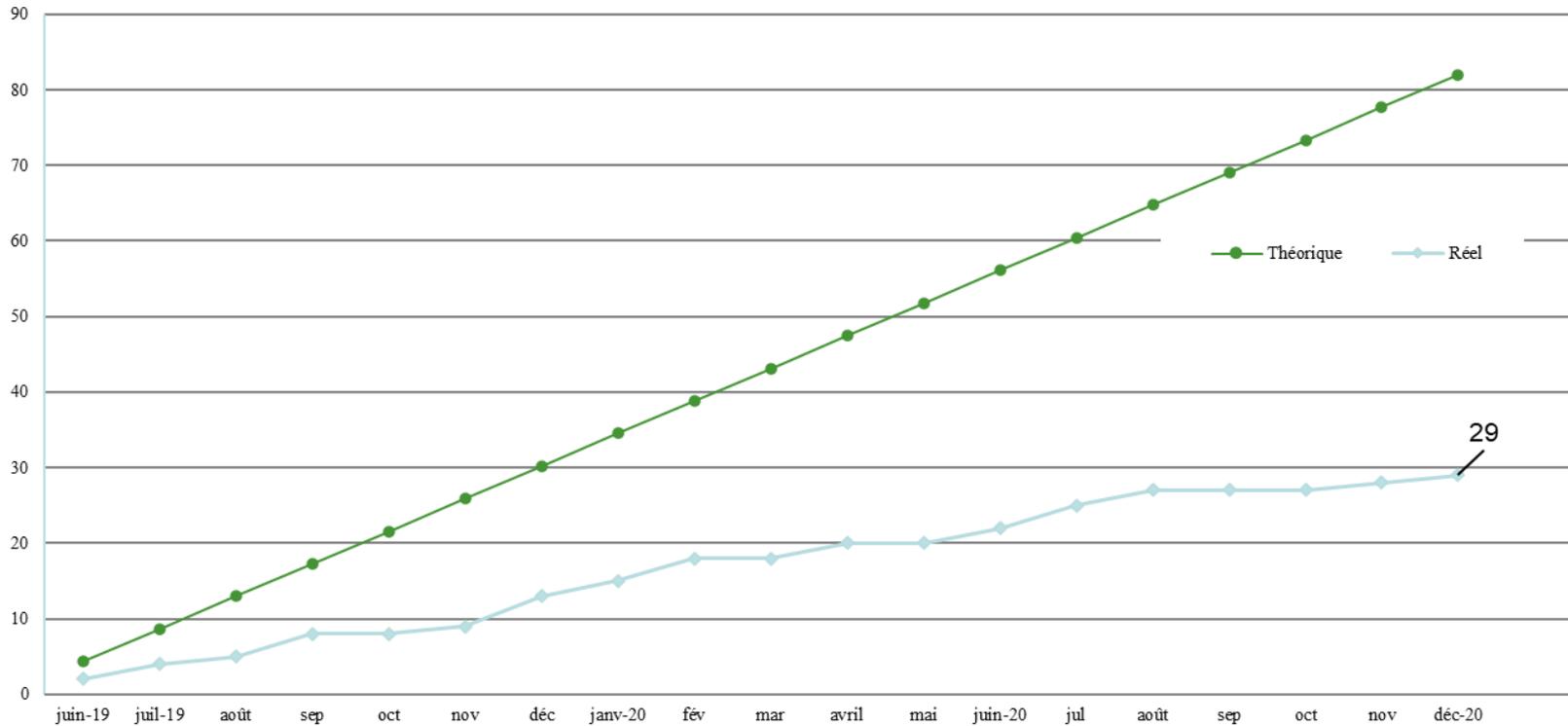
Mobilisation : Récupération de l'autonomie antérieure à l'hospitalisation

(Verticalisation, transferts, marche, escaliers)



KINEPANCH

Courbe d'inclusions



Prolongation de l'étude jusqu'en décembre 2021

Etudes à venir...



Physical Therapy Intervention in Pleural Effusion

Marie Carmen Valenza, Universidad de Granad

Brief Summary:

To know the effects of a physical therapy intervention in patients hospitalized with pleural effusion. The investigators will study the effects of the intervention in hospital stay, health status, psychological distress and quality of life.

Estimated Enrollment : 30 participants

Arm	Intervention/treatment
Experimental: Experimental group Physical therapy intervention Efficacy of electrostimulation intervention combined with lower limbs exercise.	Behavioral: Physical therapy Electrostimulation combined with exercise
No Intervention: Control group Participants will no receive physical therapy intervention	



Conclusion

- Il manque toujours des études sur l'efficacité des techniques manuelles !
- PPC à intégrer au traitement de tous les épanchements pleuraux ?
- RV en 2022 pour les résultats de KINEPANCH...
- En attendant, continuons à faire respirer et bouger nos patients...

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Merci de votre
attention

