GLMS CME

Respiratory update 29/04/2026

Donny Wong

Topics

- TB
  - Case history delay
  - Epidemiology
  - So early chest x-ray is important and sputa testing
  - Post TB sequelae
- Asthma
  - Biologics
  - Understanding of control of asthma
- Dyspnoea
  - The opiate studies
  - Management plan

42 yo male presumed fit and well

- Dry cough for the past 2/12. Left shoulder / chest pain. Non-smoker. Chills and mild fever. 4 kg of weight loss over 2 months. Negative TB testing when moving to NZ 14 years ago from India.
- Quantiferon Gold negative on immigration bloods
- Only history of Diabetes on metformin but stopped taking few years ago

- What to do next?

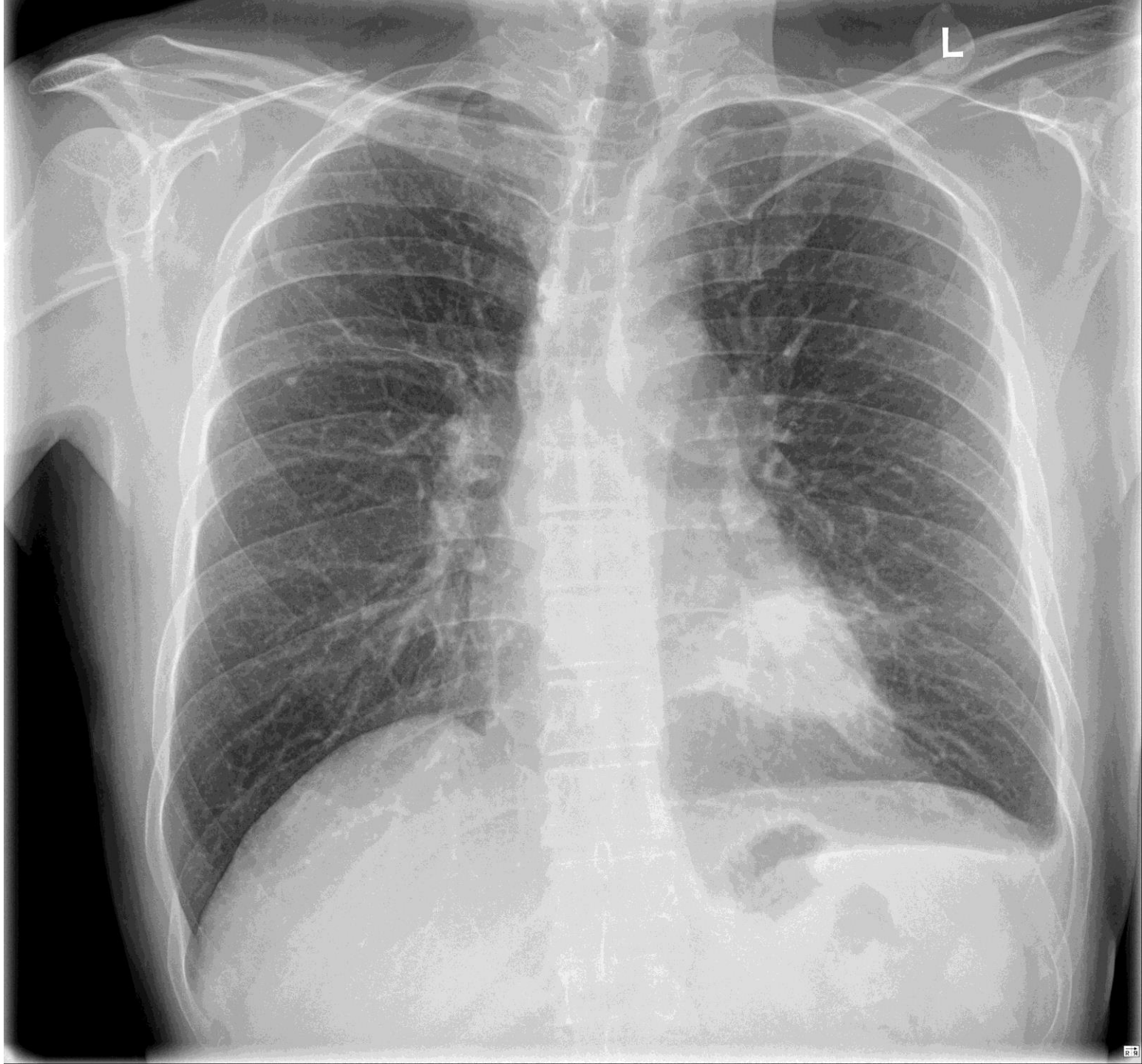
The first chest x-ray

What is the finding here?

Findings: Heart is not enlarged with a cardiothoracic ratio of 14/30. Prominence of the pulmonary hila. Suspected right lower paratracheal calcified node. Dense retrocardiac left lower lobe consolidation. Small left pleural effusion. Mild right upper lobe volume loss and upper zone reticulation.

Interpretation: Left lower lobe pneumonia. Follow up imaging in 4-6 weeks following treatment is recommended

Bloods: CRP 49 HbA1c

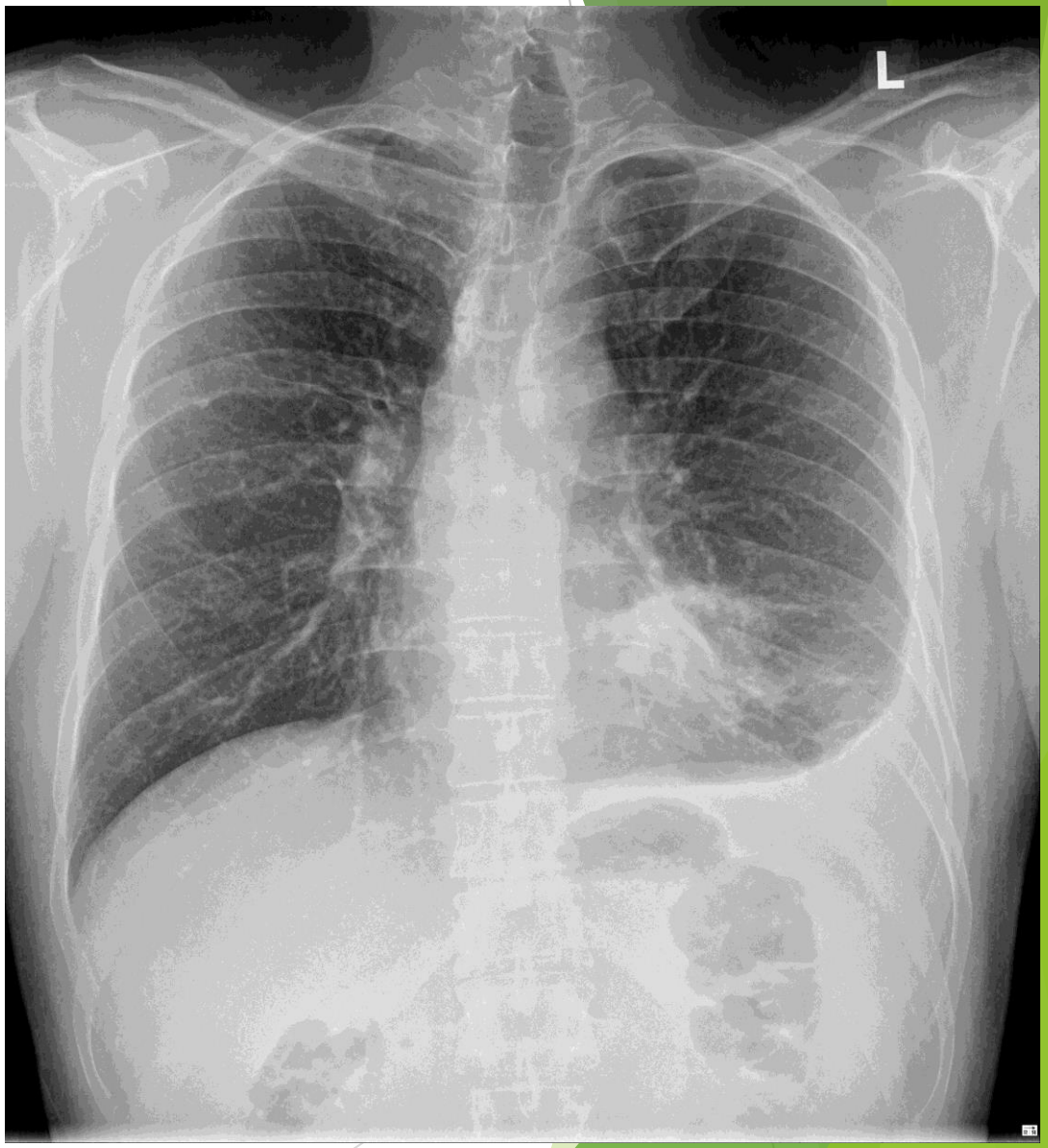


3 weeks later

- Completed course of amoxicillin then doxycycline
- Been started on galvumet
- Routine culture mixed growth

- D/W Gen Med, after initial thoughts for rulide and CXR and bloods

- Any other thoughts?

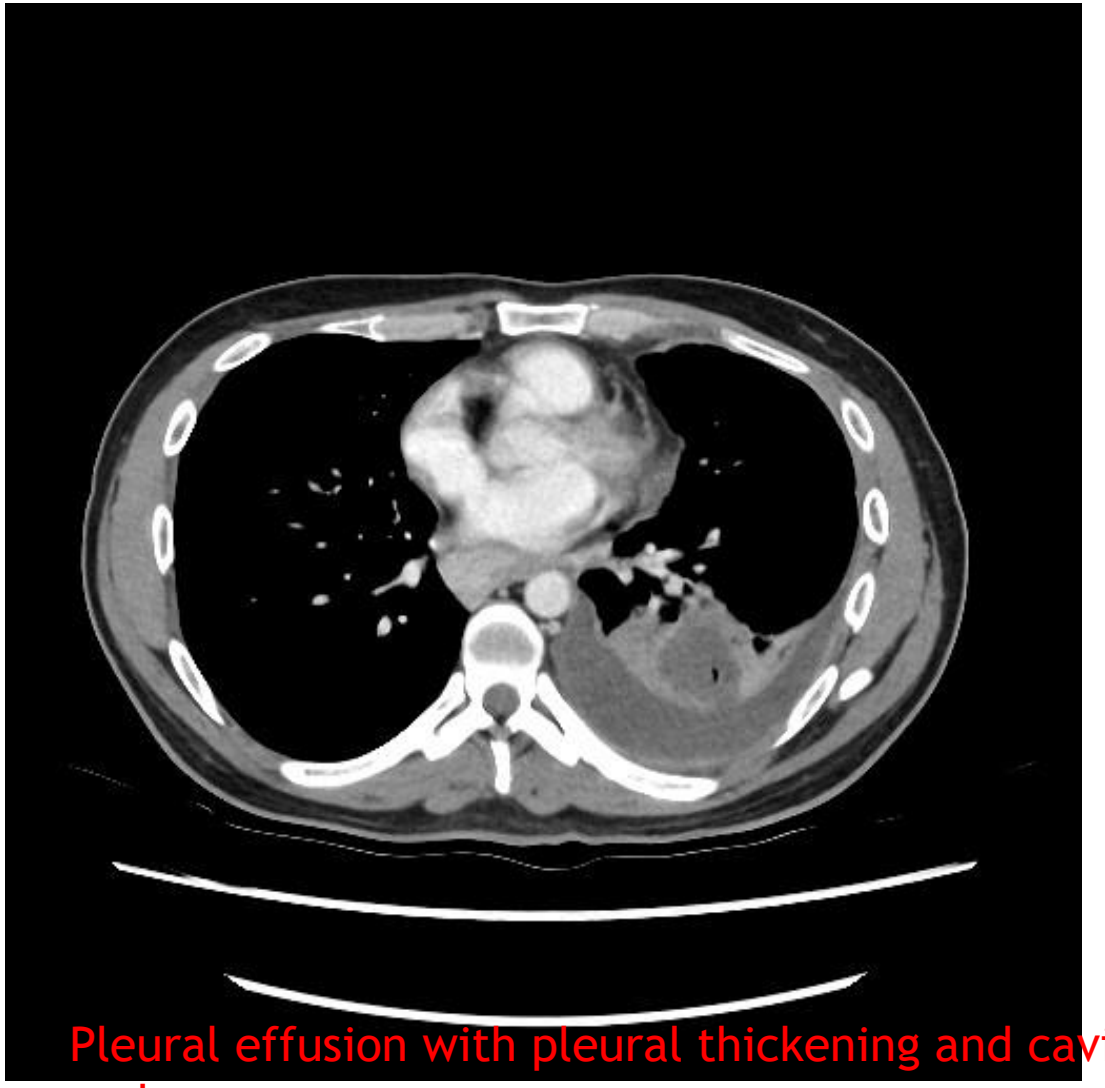


In hospital progress

- CRP 118, still normal CBC, HbA1c 84, urine antigens negative
- Med reg for empyema Mx
- PAWR seen by GM SMO, still thinks routine empyema for CT chest
- Resp Consult post CT, reg then suggested AFB sputa so isolation
- 2nd day PAWR by Resp SMO, for drain insertion and bronchoscopy
- 3rd day Bronchoscopy for washings

- DM review noted DM dx 2019 in another city

CT imaging



Pleural effusion with pleural thickening and cavitating left lower lobe (abscess) and necrotising nodes

Progress

- Poor salivary spont sputum PCR positive after bronchoscopy and smear 1+
- Pleural fluid typical lymphocytic and likely spurious normal ADA
- Bronchoscopy washings from left upper lobe and lower lobe, later 2+ smear positive,
- 1x Induced sputa later smear negative

TB epidemiology

- 300-350 cases per year in NZ, 80% born overseas
  - Chinese, Indians and Philippines
- 10 million new case per year in the world.
- There is plenty of cases of delayed diagnosis, 50% or more

- **So key things are think TB in migrant population for anyone with cough and do AFB sputa testing/Chest x-rays**

Briefly post TB sequelae

- 155 million TB survivors estimated in 2020
- Mortality higher post pulmonary TB
  - Cause of death is COPD and cancer
  - Australian data higher risk of infections too such as flu and non-typhoid salmonellosis
- DALYs (disability) estimated 58 million post TB
- Now even thinking there is a separate Post Tuberculosis bronchiectasis and COPD

46 yo female

- Hx of asthma with poor control on Symbicort 200/6
- Hay fever allergy to dust mites and Eczema
- Chronic rhinosinusitis with nasal polyposis with previous surgery
- Fhx of atopy in mum and mum's family and kid x1
- Spirometry with me FEV1/FVC 2.53/3.24 (87/92%), ratio 78%

- What to do?

Ongoing management

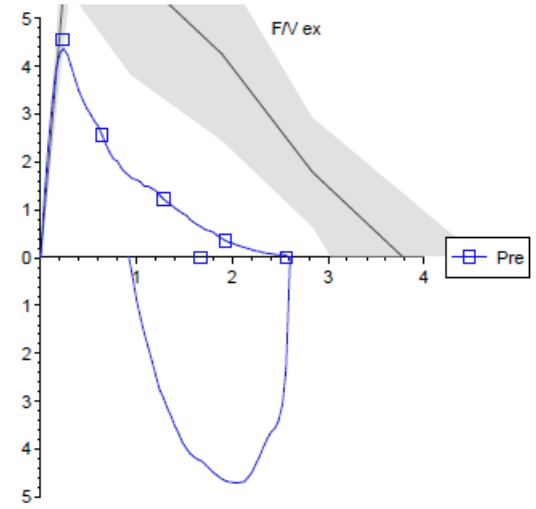
- Ix, baseline CXR, bloods for CBC, IgE, Immunoglobulins, Aspergillus RAST/Precipitins, Stronglyoides serology, ?ANCA
- Medications: Montelukast trial and Symbicort to 200/6 2 puff twice a day with course of steroids
- Note had three course of steroids, kinda for asthma

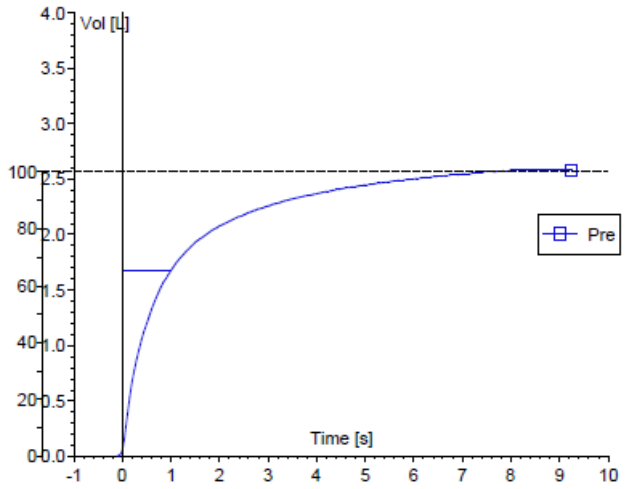
Progress 5 weeks later

- Bloods, Eosinophils 3.1
- Montelukast did not help
- ACT score 7
- Spiro in clinic normal again

		Pre	LLN	% Pred	Z-Scr	Z-Score	Post	% Chg
Spirometry								
FVC	**L**	2.57	3.02	67.9	-2.67			
FEV1	**L**	1.67	2.40	54.6	-3.40			
FEV1/FVC	**%**	65	71	80.0	-2.52			
MMEF	**L/s**	0.96	1.75	31.8	-2.97			
PEF	**L/s**	4.54	5.56	64.5	-2.78			

Test Quality





Technician Notes

Referral: Maximised asthma management, working up for Mepo as concurrent nasal polyposis, current control.

Symbicort and antihistamines last taken 37 hours before testing.

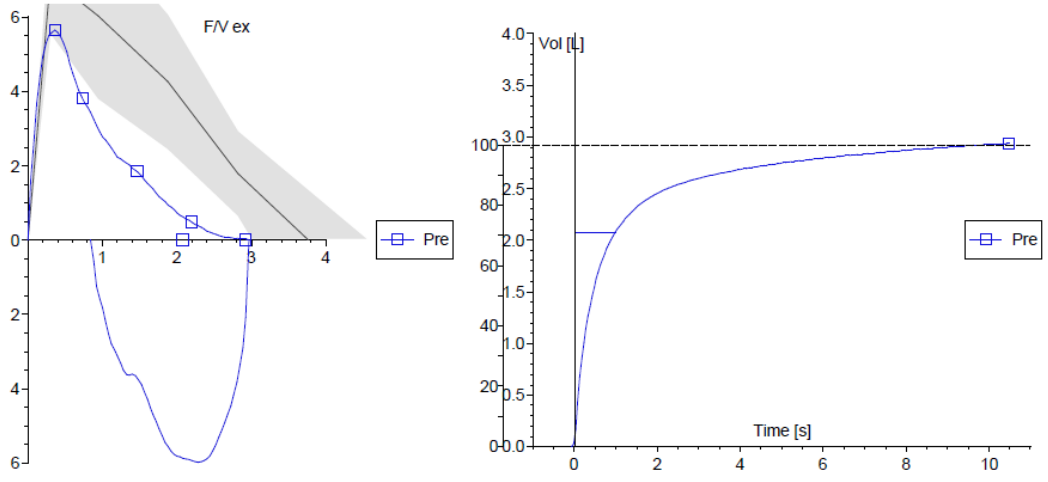
FeNO performed first, results of **51ppb** and **57ppb**.

1 year later

		Pre	LLN	% Pred	Z-Scr	Z-Score -5 -4 -3 -2 -1 Pred 1 2 3	Post	% Pred	% Chg
Spirometry GLI Multi-ethnic (2012) 3-94 years									
FVC	L	2.92	3.00	77.8	-1.81				
FEV1	L	2.07	2.38	68.3	-2.39				
FEV1/FVC	%	71	71	87.2	-1.69				
MMEF	L/s	1.36	1.71	45.7	-2.20				
PEF	L/s	5.64	5.56	80.2	-1.55				

FeNO NICE Guidelines (2024)	
FeNO (ppb)	15

Test Quality



- ACT is 29/30
- No oral steroids
- No surgery required yet

Biologics

- Went ahead with Mepo as best for her with nasal polyposis,
- NZ has also
  - Omalizumab, weight based and IgE criteria
  - Benralizumab
- Other countries other options aplenty

- Reduces prednisone requirement to nil and improve asthma control

Asthma Control Test

https://www.asthmacontroltest.com/welcome/

The website is funded and developed by GSK. This website is not for residents of the USA.
The Asthma Control Test is for persons who have been diagnosed with asthma by their healthcare professional and not intended to be used for the diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease. Its purpose is for education. The Asthma Control Test does not aim to substitute professional counselling and medical advice, professional diagnosis, service, treatment or monitoring of any condition. If you feel any discomfort or have any concerns or questions about your health, you should always consult with a healthcare professional.

1

1. During the last 4 weeks, how much of the time has your asthma kept you from getting as much done at work, school or home?

All of the time

2

2. During the last 4 weeks, how often have you had shortness of breath?

Once a day

3

3. During the last 4 weeks, how often have your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) woken you up at night or earlier than usual in the morning?

Once a week

4

4. During the last 4 weeks, how often have you used your rescue inhaler or nebuliser medication (such as Salbutamol)?

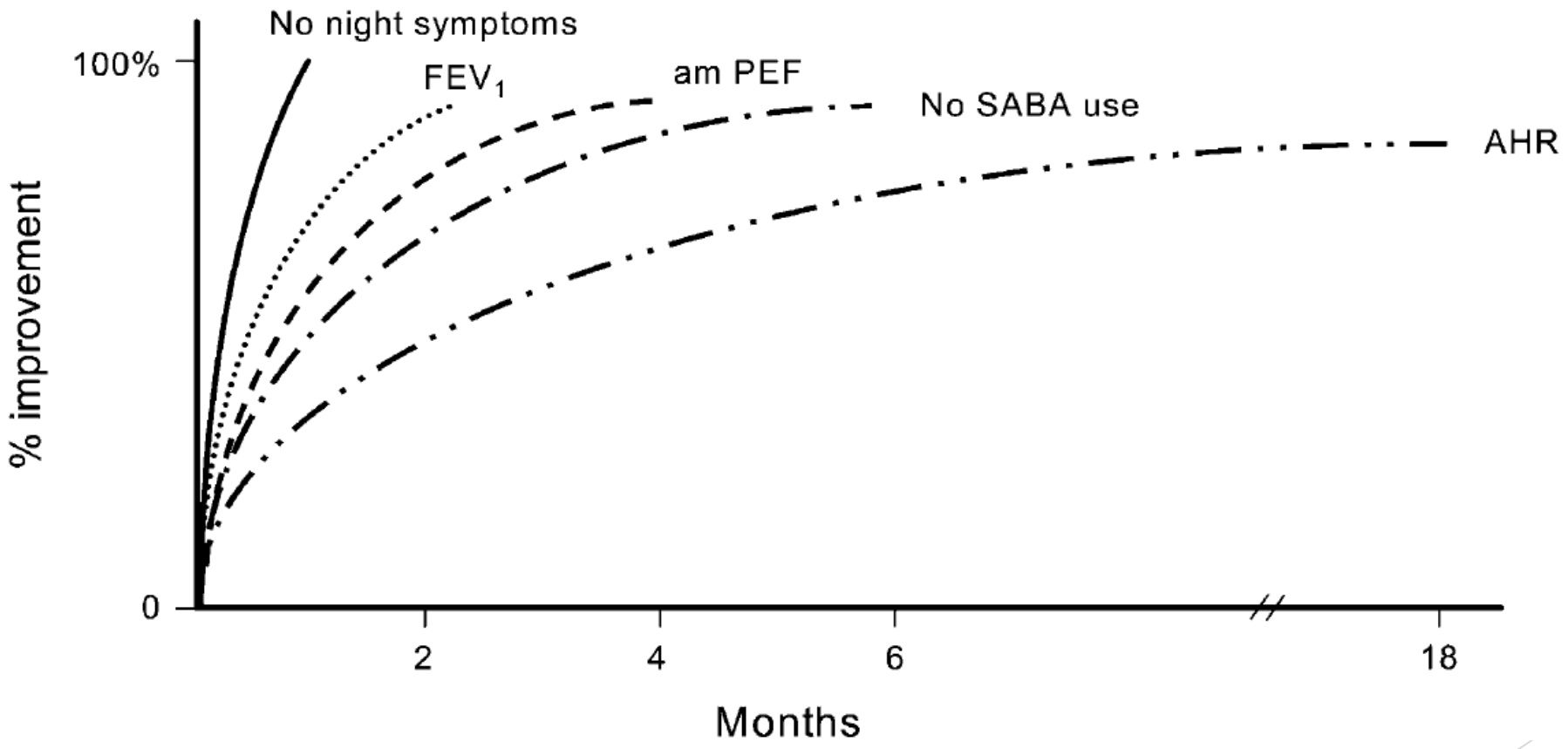
Once a week or less

5

5. How would you rate your asthma control during the last 4 weeks?

Completely Controlled

Asthma control variables



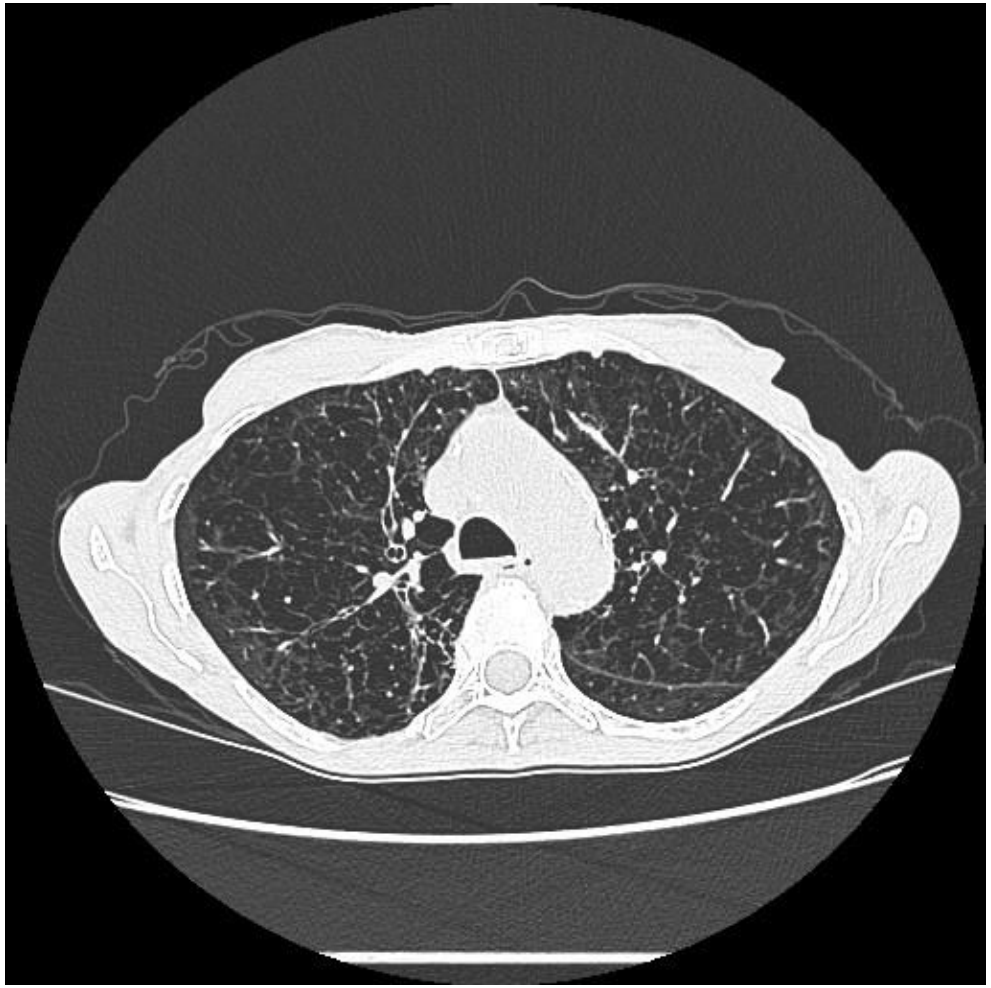
65 yo female

- Seen first time Nov 2023 for COPD review after hospitalised exacerbation
  - Spirometry 2014 FEV1/FVC of 1.08/2.22 (39/63%)
  - Done pulmonary rehab prior clinic
- Background Hx, PVD with stents in 2013,Hypertension, Dyslipidaemia, Renal artery stenosis, very low BMI 13!, ex smoker 40 py
- Meds: DAPT, Spiriva, Breo, Lisinopril
- Eos 0.3

- Any other thoughts?

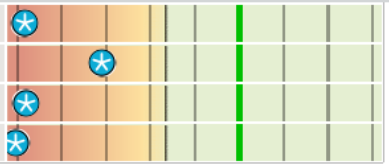
- Proceeded to updated HRCT and repeat formal lung functions

HRCT



- Diffuse emphysema with mild generalised bronchitis

Updated lung functions

		Meas	LLN	ULN	%Pred	Z-scr	Z-Scr -5 -4 -3 -2 -1 Pred 1 2 3
DYNAMIC VOLUMES							
FEV1	[L]	0.50	1.82	3.04	20	-4.83	
FVC	[L]	1.68	2.33	3.94	54	-3.09	
FEV1/FVC	[%]	30	66	89	37	-4.80	
PEF	[L/s]	0.90	4.47	7.95	14	-5.02	
STATIC LUNG VOLUMES							
TLC	[L]	5.09	4.05	6.02	101	0.09	
VC	[L]	1.68	2.16	3.54	59	-2.78	
FRCpl	[L]	4.15	1.91	3.56	152	2.82	
RV	[L]	3.40	1.40	2.55	172	4.08	
RV%TLC	[%]	67	31	50	166	4.55	
GAS EXCHANGE							
DLCO_SB	[mmol/(min*kPa)]	1.33	5.04	8.54	20	-8.31	
VA_SB	[L]	2.94	3.82	5.74	62	-3.39	
KCO_SB	[mmol/(min*kPa*L)]	0.45	1.07	1.76	32	-5.80	
DLCOcSB	[mmol/(min*kPa)]	1.45	5.04	8.54	22	-7.95	
KCOc_SB	[mmol/(min*kPa*L)]	0.49	1.07	1.76	35	-5.47	
Hb	[g(Hb)/dL]	13.20					

Further exacerbations

- 3x in 2024 hospitalisation
- Then Non-infective exacerbation COPD Feb 2025
- Gen Med started on Morphine then midazolam

- I caught up via telehealth May 2025

- After that two further admissions in June and August for breathlessness.
- Then admissions September 2025 and January 2025 with BIPAP use with recurrent right pneumonia.
- Seen recently very helpful on the medications for her breathlessness

Recent clinical trials

JAMA | Original Investigation

Effect of Regular, Low-Dose, Extended-release Morphine on Chronic Breathlessness in Chronic Obstructive Pulmonary Disease The BEAMS Randomized Clinical Trial

Magnus Ekström, MD, PhD; Diana Ferreira, MD, PhD; Sungwon Chang, PhD; Sandra Louw, BSc; Miriam J. Johnson, MD, MBChB; Danny J. Eckert, PhD; Belinda Fazekas, GDip; Katherine J. Clark, PhD; Meera R. Agar, PhD; David C. Currow, MPH, PhD; for the Australian National Palliative Care Clinical Studies Collaborative

Morphine for chronic breathlessness (MABEL) in the UK: a multi-site, parallel-group, dose titration, double-blind, randomised, placebo-controlled trial

*Miriam J Johnson, Bronwen Williams, Catriona Keerie, Sharon Tuck, Simon Hart, Sabrina Bajwah, Nazia Chaudhuri, Mark Pearson, Judith Cohen, Rachael A Evans, David C Currow, Irene J Higginson, Peter Hall, Marek Atter, John Norrie, Marie T Fallon, on behalf of the MABEL collaborative**

Summary

Background The effectiveness of opioids for breathlessness seen in laboratory-based studies has not been replicated in clinical trials. We aimed to assess the effectiveness of oral morphine for breathlessness in long-term conditions.

Lancet Respir Med 2025; 13: 967–77

In summary

- Both studies near 150, RCT with placebo blinded
  - Both used numerical rating scale 0-10 as primary outcome
- First study (AUS), assess 8-16 mg long acting morphine total dose a day
  - No difference in breathless at 1 week and no actigraphy improvement
- Second study (UK), assess 5-10 mg long acting morphine twice a day
  - primary outcome of breathlessness at 28 days, maybe helped with cough and activity but not significant.

Systematic review

Opioids for the palliation of symptoms in people with serious respiratory illness: a systematic review and meta-analysis

Natasha E. Smallwood [1,2], Amy Pascoe [2], Marlies Wijsenbeek [3], Anne-Marie Russell [4,5], Anne E. Holland [2,6,7], Lorena Romero [8] and Magnus Ekström [9]

- Conclusion of review is:
- Opioids were shown to improve exertional breathlessness in exercise studies, but had no impact on breathlessness, cough or quality of life in daily life. Significant reported adverse events, including hospitalisation and death, may outweigh any benefits
- ERS guidelines based on this:
- We suggest not using opioids for the treatment of breathlessness in people with serious respiratory illness (conditional recommendation against the intervention, very low certainty of evidence).

So what to do especially in lung disease

- Breathlessness strategies for COPD
  - Conserve your energy and pace yourself
  - Use a fan
  - Find a resting position
  - Breathing control techniques
  - Distraction and relaxation
  - Exercise
  - Medication

www.asthmafoundation.org.nz/resources/breathlessness-strategies-for-copd

WHEN FEELING BREATHLESS...

Stop what you are doing → Find a resting position → Use your fan or the breeze → Choose your preferred breathing technique, & continue for 2-3 minutes

AFTER 2-3 MINUTES EVALUATE YOUR BREATHLESSNESS

Are you feeling less breathless and more in control?

Yes: Continue with your activity

OR

No: Take reliever medication through a spacer, then resume breathing technique for another 2-3 minutes

If you still feel no better, then assess whether you need to seek medical help