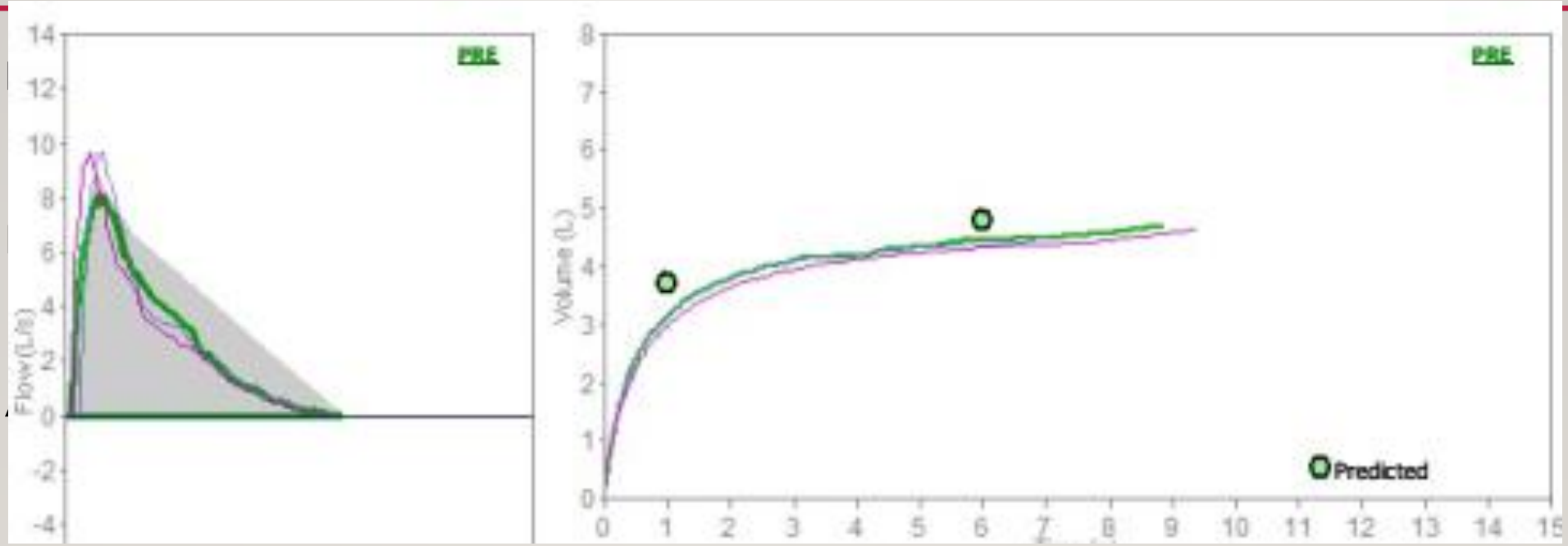
RESPIRATORY CASES

25TH JULY 2022

DONNY WONG

60 YEAR MALE OLD EX SMOKER (30 PACK)



- FEV1/FVC of 3.69/4.72 (85/99%) ratio 67%

What's the diagnosis?

FOLLOW UP TESTS

- HRCT (chest): Diffuse bronchial wall thickening and functional small airways disease
- Bloods, eosinophilia 0.7, IgE 110, Aspergillus serology unremarkable. No skin prick test
- Formal lung functions, FEV1/FVC of 3.23/4.83 (86/100%), ratio 67%. TLC 7.6 (103%), DLCO 103%, FeNO 53/54
- CT sinus: Variable pansinusitis, maximal through right maxillary ethmoid and frontal sinus regions. Extensive polyposis about the middle turbinates. Left mastoid opacification medially and bilateral earwax.

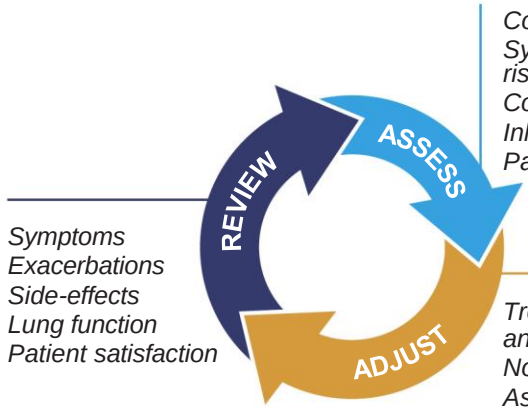
- ?**Asthma with fixed airflow limitation**
  - So changed to Qvar with higher dose ICS 100 mcg 3 puffs bd.
- Referred to ENT after script for maximal sinusitis treatment

FOLLOW UP

- 4/12 later sinus surgery
- Improved post surgery only 1x prn Qvar a month
- Reviewed 2/12 post surgery spirometry normal
  - FEV1/FVC is 4.60/6.02 (125/126%) with ratio 76%. Peak flow 650L/min.
- Changed to Symbicort Smart

Adults & adolescents 12+ years

Personalized asthma management
Assess, Adjust, Review
for individual patient needs



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (see Box 2-2B)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down/up/between tracks)
Education & skills training

CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

STEPS 1 – 2	STEP 3	STEP 4	STEP 5
As-needed low dose ICS-formoterol	Low dose maintenance ICS-formoterol	Medium dose maintenance ICS-formoterol	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed low-dose ICS-formoterol

See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Take ICS whenever SABA taken	Low dose maintenance ICS	Low dose maintenance ICS-LABA	Medium/high dose maintenance ICS-LABA	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-LABA, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed short-acting beta$_2$-agonist

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	*Medium dose ICS, or add LTRA, or add HDM SLIT*	*Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS*	*Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects*

MILD ASTHMA

- Even apparently mild asthma are still at risk:
  - adults with acute asthma: 30–37%
  - near-fatal asthma: 16%
  - adults dying of asthma: 15–27%
- Triggers are unpredictable
- 4–5 steroids courses can increase risk of osteoporosis, DM, cataract

GP OR SPECIALIST CARE

Investigate and manage difficult-to-treat asthma in adults and adolescents

Consider referring to specialist or severe asthma clinic at any stage

DIAGNOSIS: ***"Difficult-to-treat asthma"***

For adolescents and adults with symptoms and/or exacerbations despite medium or high dose ICS-LABA, or taking maintenance OCS

1 Confirm the diagnosis (asthma/differential diagnoses)

2 Look for factors contributing to symptoms, exacerbations and poor quality of life:

- Incorrect inhaler technique
- Suboptimal adherence
- Comorbidities including obesity, GERD, chronic rhinosinusitis, OSA
- Modifiable risk factors and triggers at home or work, including smoking, environmental exposures, allergen exposure (if sensitized); medications such as beta-blockers and NSAIDs
- Overuse of SABA relievers
- Medication side effects
- Anxiety, depression and social difficulties

3 Optimize management, including:

- Asthma education
- Optimize treatment (e.g. check and correct inhaler technique and adherence; switch to ICS-formoterol maintenance and reliever therapy, if available)
- Consider non-pharmacological interventions (e.g. smoking cessation, exercise, weight loss, mucus clearance, influenza and COVID-19 vaccination)
- Treat comorbidities and modifiable risk factors
- Consider non-biologic add-on therapy (e.g. LABA, LAMA, LM/LTRA, if not used)
- Consider trial of high dose ICS-LABA, if not used

4 Review response after ~3-6 months

Is asthma still uncontrolled?

yes → DIAGNOSIS: ***"Severe asthma"*** → If not done by now, refer to a specialist, if possible

no → Consider stepping down treatment, OCS first (if used)

Does asthma become uncontrolled when treatment is stepped down?

yes → Restore previous dose

no → Continue optimizing management

Key

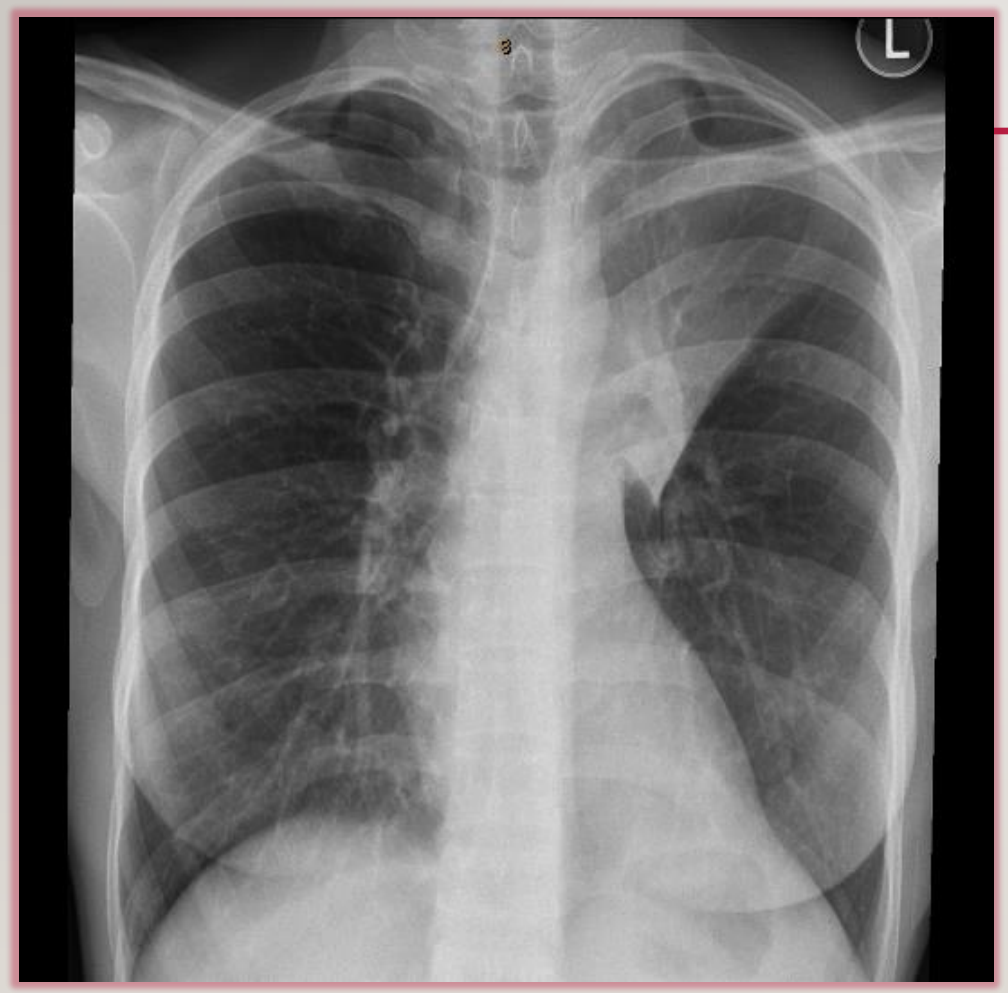
- decision, filters
- intervention, treatment
- diagnosis, confirmation

KEY MESSAGES

- Symbicort SMART is preferable
  - Same reduction of exacerbation as daily maintenance ICS
  - Less hospitalisations and ED visits cf. daily maintenance
- Mild asthma can be bad
- GINA would like spirometry prior diagnosis, NZ guidelines more pragmatic

31 YEAR YO FEMALE

- Presented to me after routine CXR.
- Asymptomatic and never smoker
- 2019, LUL collapse ?endobronchial lesion, bronch normal and no Tb found
- On hindsight previous bloods showed, eosinophilia up to 2.25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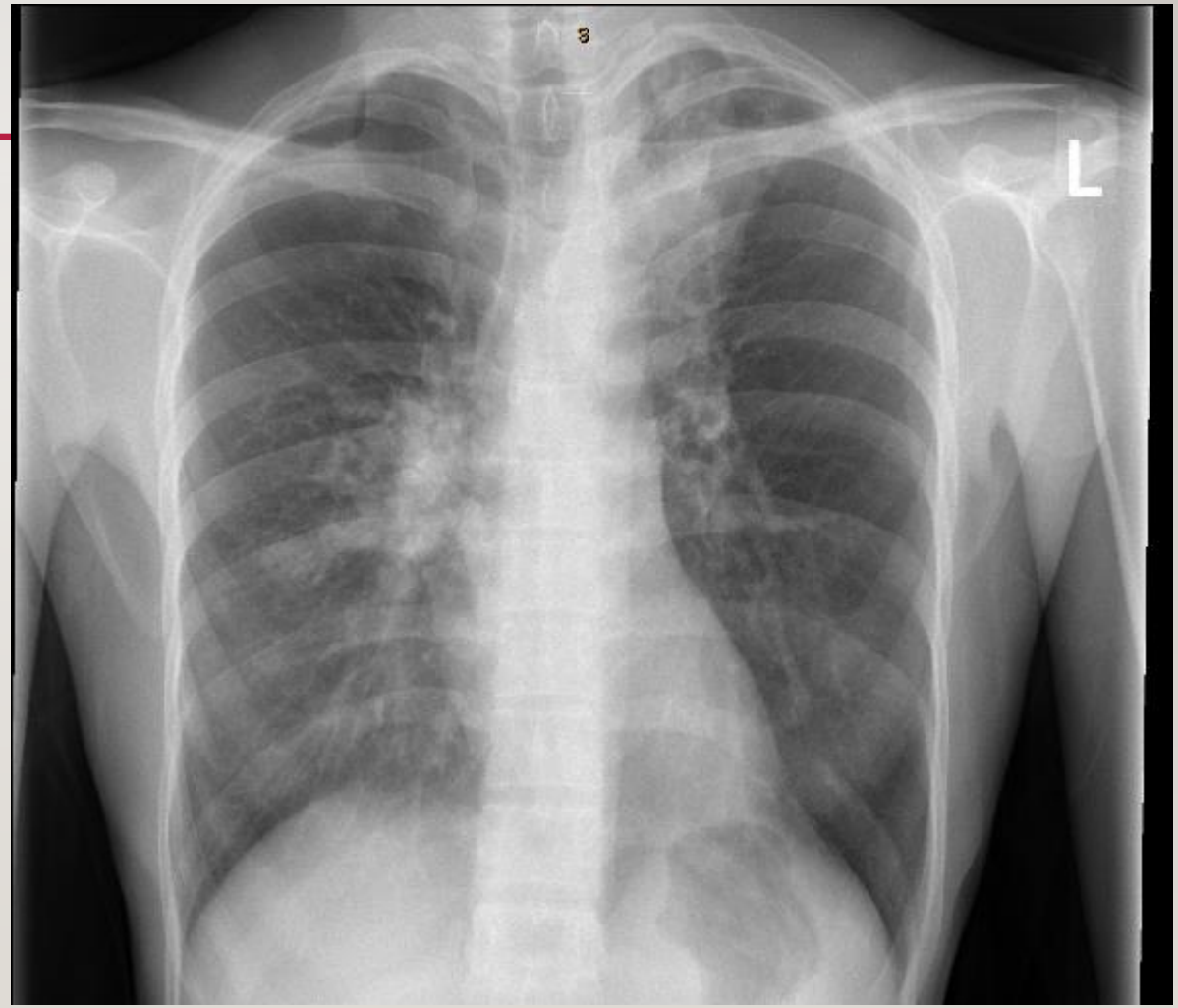
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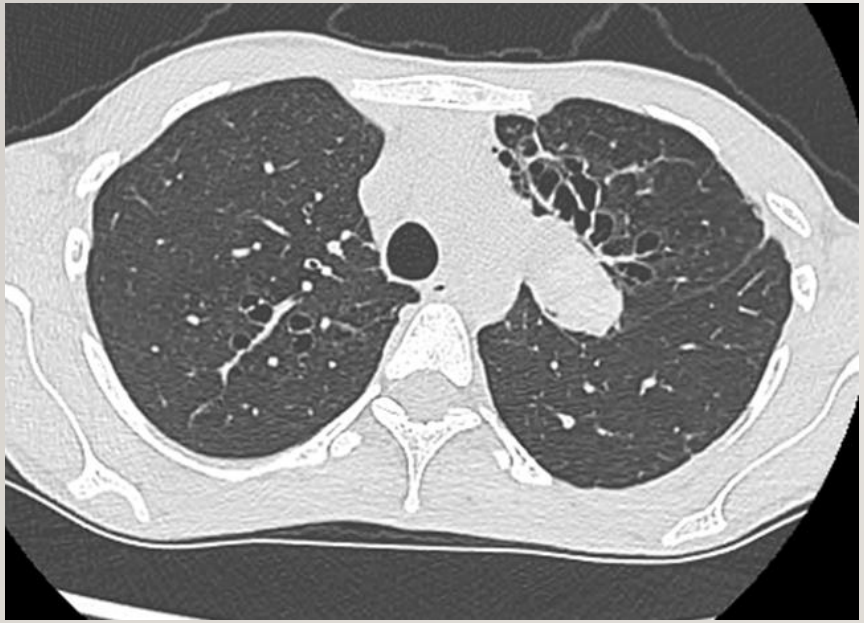
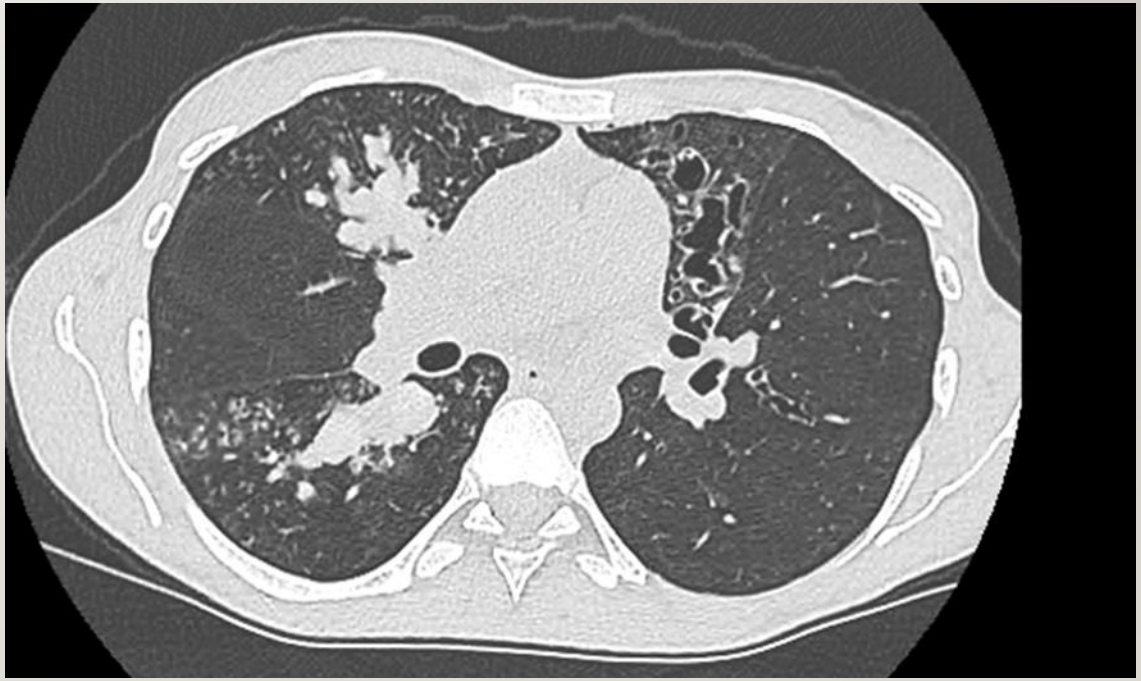
CURRENT WORK UP

- IgE >2500, Eosinophils
- SPT only positive to aspergillus
- Aspergillus serology RAST 4+, Precipitins >200
- Spirometry not done.
- CT done, bronchiectasis with mucus plugs

CT SCAN





ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS (ABPA)

DIAGNOSIS

- ?Asthma
- IgE ☑
- Aspergillus RAST/SPT ☑

- Aspergillus preciptins ☑
- CT findings ☑
- Esonophiliia ☑

TREATMENT

- Prednisone mainstay for months
- No antifungal role first
- Monitoring IgE and eosinophils
- ICS maybe enough.

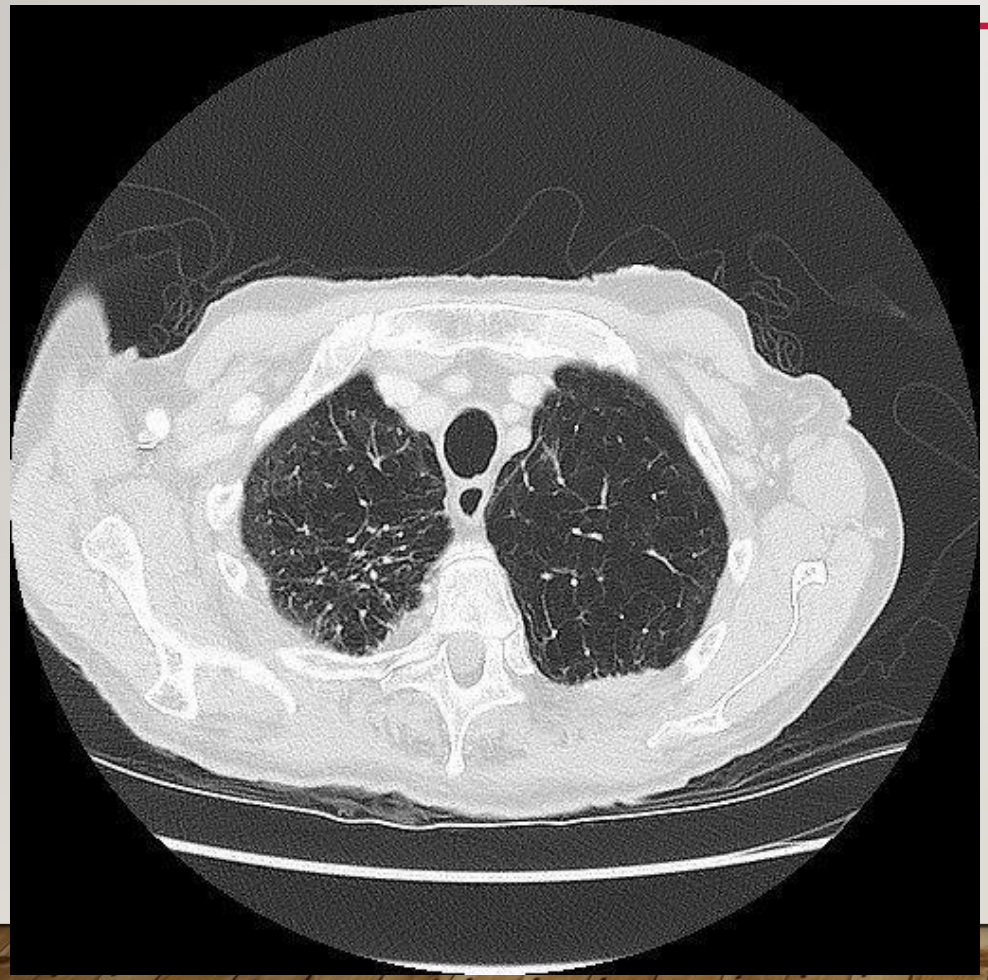
ABPA

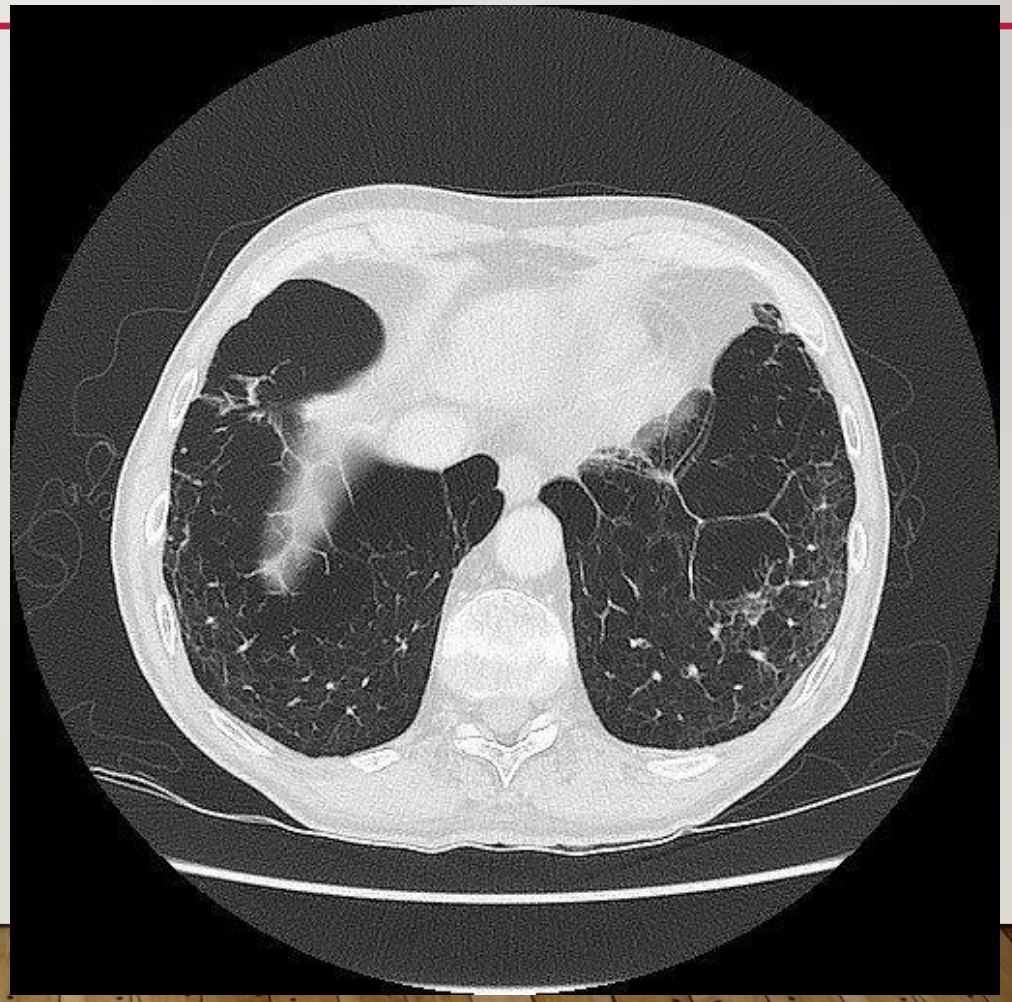
- Bad case of extreme allergy to an allergen in this case aspergillus
- Aspergillus is an ubiqituous fungi
- In a spectrum of aspergillus disease but not an infection per se.
- Monitored by IgE and Eosinophils

77 YEAR OLD MALE

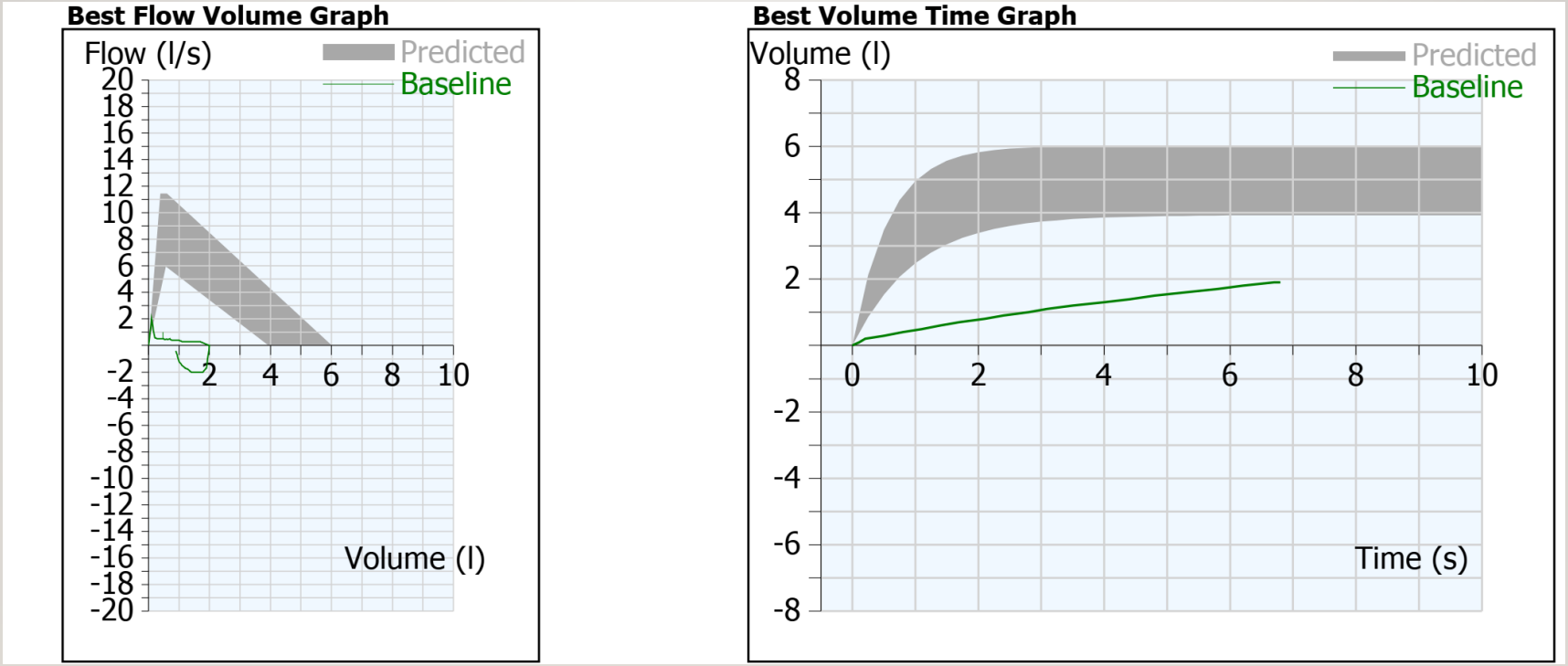
- First saw me in 2019 with exacerbation of COPD with RSV
- FEV1 in hospital showed 0.47 L, 13% predicted, FVC 1.93 (39%)
- LUL lesion ?cancer, CT diffuse emphysema and bullous disease.
- Opted for review in clinic with repeat spirometry but declined FU.
- Further yearly exacerbations, CT chest showed resolution
- AF anticoagulated

CT





SPIRO


Best Flow Volume Graph
Flow (l/s)
Predicted
Baseline
20
18
16
14
12
10
8
6
4
2
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
2
4
6
8
10
Volume (l)
Best Volume Time Graph
Volume (l)
Predicted
Baseline
8
6
4
2
0
2
4
6
8
10
-2
-4
-6
-8
Time (s)

CURRENT STATUS

- Latest Nov 21 exacerbation discharge on home short term oxygen.
- Declined LTOT assessment clinic 6 weeks post discharge opted for telehealth
- Doing okay independent ADLS though ?help required
- No exacerbations
- ?Mild leg swelling

- What to Do?

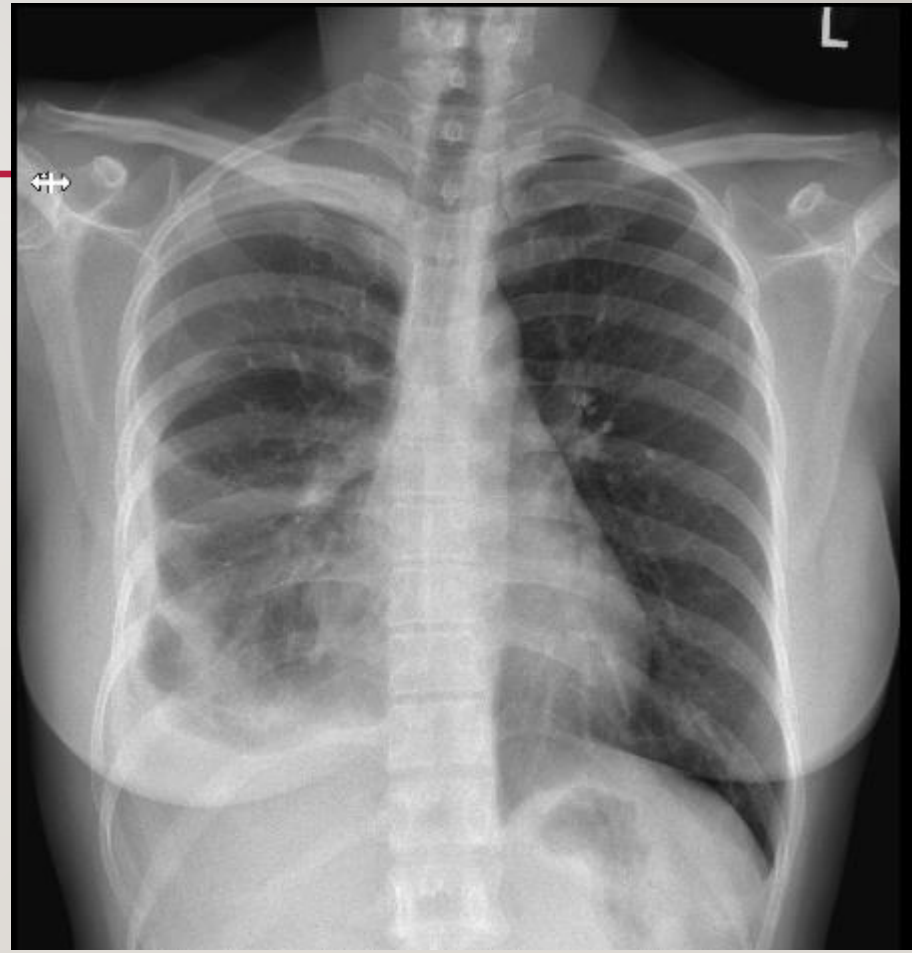
MANAGEMENT

- Already been referred to Pulmonary rehab, declined to attend
- PT already referred to hospice
- Offered NASC referral, also decline
- Ideally in person to assess for LTOT and spirometry
- Assess for LTOT with cor pulmonale/polycythamia , ie when sats 92% or less
  - Criteria PaO2 <8.0 vs less than 7.3
- Already on triple inhaler
  - assess eosinophilia (0.3) ?stop ICS.

34 YO FEMALE

- 3-4 kg weight loss with cough over a month
- CXR shows moderate R) effusion
- Thoraconcentesis completed
  - Adenosine deaminase 37, Lymphocytic exudate

- Any risk of infection?



PROGRESS

- TB PCR positive on pleural fluid, but culture even after 8 weeks negative.
- 3 Induced sputa done, all smear positive and 1x culture positive at 4 weeks
- Started RHEZ and progressing appropriately

TB FACTS FROM LATEST 2018

- 307 cases a year, 80% are migrants; 80.5% with symptoms to doctor, 10.8% immigration screening, 4.7% contact tracing
  - Counties Manukau (11.8 per 100,000), Capital & Coast (10.1 per 100,000) and Waitemata (8.3 per 100,000) DHBs
  - Asian ethnic group (26.6 per 100,000), followed by MELAA (18.2 per 100,000) and Pacific peoples (11.8 per 100,000)
- Pulmonary 56.2% and over the years (2014-2018)16.2% pleural