Difficult Asthma
Case 1

- Female age 63 (July 2015)
- Never smoked
- OSA / CPAP
- Reflux, O'porosis, Ht, Depression
- Allergic Rhinitis
  - Mometasone nasal

- (Extrinsic) Asthma
  - 1.72 (68%) / 2.59 (79%) litres, ratio 66%
  - FeNO 45ppb
- Bronchiectasis, esp Upper Lobes
  - IgE 361
  - Eos 0.8 (13%)
  - Aspergillus RAST “very low”
  - Immunoglobulins normal

- “Much better”
- 1.95 (78%) / 2.86 (88%)

- However, over the next 2 years
  - Increasing nasal symptoms
  - ENT : Polyps removed, x2
  - Increasing cough, wheeze, SOB
  - Increasing steroid use

- Eos 1.64 (16.4%)
- ACQ 4.8
- Spirometry 1.65 (68%) / 2.23 (70%)
- FeNO 100ppb

- Mepolizumab
- “Much better” hay-fever and asthma
- Spirometry 1.99 (81%) / 2.66 (83%)
- ACQ 1.4
- FeNO 24ppb

Asthma Control Questionnaire 5 item version (ACQ-5) Calculation Sheet

A completed copy of this ACQ-5 Calculation Sheet is to be posted along with the completed PBS authority application, authority prescription and the blood eosinophil pathology report to:

Department of Human Services
Complex Drugs Programs
Reply Paid 9826
Hobart TAS 7001

Patient's full name: _____ Date of assessment: _____

Instructions to complete the ACQ-5 Calculation Sheet

1. Transcribe the patient's ACQ-5 responses into the table below
2. Calculate the total score by adding the 5 responses together
3. Divide the total score by 5 to determine the mean ACQ-5 score

Question	Patient's responses (0 to 6)
Q1 (woken during the night)	
Q2 (symptoms in the morning)	
Q3 (day-to-day activities)	
Q4 (shortness of breath)	
Q5 (wheeze)	
Total score (sum of the above responses):	
Divide by 5:	÷ 5
Mean ACQ-5 score* (Total score ÷ 5):	

*An ACQ-5 score of at least 2.0, as assessed in the previous month, is required for Nucala PBS eligibility

Please retain a photocopy of this form in the patient's records

Prescriber's declaration

I declare that the information provided on this form is correct

Name of Prescriber: Signature of Prescriber: Date:

Case 2

- Female, age 43 (Feb 2015)
- Smoked 14-39, 25 Pack Years
- Allergic Rhinitis
  - Desensitisation
  - Mometasone
- Multiple admissions for asthma
- Spirometry 2.86 (100%) / 3.48 (98%)

- IgE 2,417
- RASTs
  - Very High: Mould mix
  - Moderate: Tree pollens, HDM

HRCT normal

Continued multiple acute admissions

Montelukast added

Spirometry still normal when well

- Continued severe exacerbations
- Elevated FeNO 85ppb
- Eosinophilia
- Mepolizumab
  - Obvious response
  - Eos now normal

Lost to F/U one year

- ACQ 4.25
- Spirometry 2.18 (79%) / 3.07 (88%)
- Elevated FeNO 79ppb
- Benralizumab

- Spirometry normal
- Much reduced symptoms

Case 3

- Male, age 48 (June 2016)
- Never smoked
- Lifelong asthma
- Significant exposure to cs-gas (tear gas) 2010
- Seretide Accuhaler
- Marked increase in Steroid use 1 year

- Spirometry 1.66 (43%) / 2.36 (48%), ratio 70%
- Post B/D 2.20 / 3.20
- Normal eosinophils, IgE
- Normal FeNO 16ppb

- Flutiform MDI / Spacer
- 2.52 / 3.73; much better, but still intermittent steroid

- Feb 2017 2.72 / 3.97
- Jul 2017 2.06 / 3.00

- Trial Azithromycin, 500mg Mon, Wed, Fri
- QTc normal
- Gibson, P.G., et al, Lancet, 04-07-2017

- Also on Flutiform, Montelukast, Umeclidium

- Legal Hearing May 2018 re CS-Gas
- Now working in Katanning
- Much more stable; less Steroid
- Trial off Azithro

- ?Tezepelumab - ?tilting at windmills

- Omalizumab
  - Binds to circulating IgE
- Mepolizumab
  - Binds to and inhibits IL-5
- Benralizumab
  - Binds to IL-5 receptors
- Tezepelumab
  - Reduces lymphocyte maturation, reducing Type-2 inflammatory response

Take Home

- Not all “difficult” asthma is severe
- In severe asthmatics, half to two-thirds have eosinophilic inflammation
- Monoclonal antibodies reduce eosinophils and FeNO, reduce steroid requirement and exacerbations and may improve spirometry
- Non-eosinophilic asthma is currently much harder

- Several medical conditions interact with asthma
- There may be psychological interactions
- Remember vocal cord dysfunction
- Every asthmatic should have a FBC, off oral steroids
- FeNO is a bio-marker for eosinophilic inflammation


Did you come on the bus Ethel??
Yes, but I made it look like an asthma attack.!!

IPF

- Male, aged 65 (2017)
- 20+ P/Y ex-smoker
- Asymptomatic, but strong FH IPF
  - Mother, Brother and Sister
- Clubbed and crackles
- Normal spirometry and volumes
- DLCO 58%, corrected 55%
- CT Emphysema + IPF (UIP)

- 1017 0118 0418 0718 1018 0119 0419 1019
- 58% 53 53 59 56 59 55 57
- 55% 58 55 56 58 51 57 63
- 4.4 4.0 4.0 4.3 4.2 4.4 4.3 4.3
- Pirfenidone Jan 2018
- Modest elevation Alk Phos / GammaGT / ALT
- CT 01/19 unchanged
- So far so good

IPF

- Female, age 67 (2018)
- Open lung biopsy 2015: UIP
  - Offered Nintedanib, not taken
- Dry cough, SOBOE
- Crackles
- Near normal spirometry, but ratio 87%
- FVC 2.1 litres (74%)
- DLCO 53%, corrected 72%

- CT: UIP, ??NSIP
- Auto-Antibodies negative
- 11/18 02/19 07/19 01/20
- 53% 45 51 43
- 72% 68 86 69
- 2.1 1.9 1.8 1.8
- Nintedanib begun 02/19
- Nintedanib ceased 06/19 (intolerant)

IPF

- We know Pred / Aza / NAC doesn't work
- Pirfenidone and Nintedanib work equally well
- Both slow the rate of progress
- Lots of S/E's
- Both work early and late in the disease.
- Maybe both work in other ILDs