THE RESPIRATORY LONG CASE

Dr Natalie Belousova

21 March, 2026

MY APPROACH

1. History of presenting illness
2. Complications
3. Medications/treatment
4. Function
5. Social
6. Prognosis

HISTORY OF PRESENTING ILLNESS

Disease (obstructive/restrictive/suppurative)

Onset

Predisposing factors

Progression#

Exacerbations/hospitalizations

Treatments

COMPLICATIONS

Associated conditions/syndromes

- CF
  - DIOS, diabetes, pancreatic insufficiency
  - Genotype, CFTR modulator therapy, haemoptysis
- Scleroderma
  - CREST syndrome
  - Reflux

Complications of therapy

- Corticosteroids
- Immunosuppression

Pulmonary hypertension

CO2 retention

Sleep

MEDICATIONS/TREATMENT

Inhalers: type, frequency, technique

Oxygen

CPAP/BiPAP

If immunosuppressed: PJP prophylaxis

If bronchiectasis: sputum clearance, azithromycin

Opiates for breathlessness

Vaccinations

FUNCTION

Breathlessness

Participation in physical exercise

Pulmonary rehabilitation

Breathlessness clinic

19.28 Modified MRC dyspnoea scale

Grade	Degree of breathlessness related to activities
0	No breathlessness, except with strenuous exercise
1	Breathlessness when hurrying on the level or walking up a slight hill
2	Walks slower than contemporaries on level ground because of breathlessness or has to stop for breath when walking at own pace
3	Stops for breath after walking about 100 m or after a few minutes on level ground
4	Too breathless to leave the house, or breathless when dressing or undressing

(MRC = Medical Research Council)

SOCIAL

Social supports

Substance use
- Smoking
- Vaping

Travel
- Oxygen use during flights

Employment/education

Accommodation

Pets

Family planning

PROGNOSIS

Palliative care

Transplant candidacy

- Age
- Comorbidities
- Substance use
- Mental health
- Social supports
- Understanding of condition
- Compliance with treatment

THE TRANSPLANT LONG CASE

Dr Natalie Belousova

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MY APPROACH

1. Background
2. Graft function
3. Rejection history
4. Infection
5. Malignancy
6. Other complications
7. Medications
8. Social
9. Examination
10. Summary

BACKGROUND

Timing of transplant

- Short-term (0-6 months): Surgical complications, rehabilitation, rejection, infection
- Medium-term (6 months-2 years): Graft function, rejection, infection
- Long-term (2+ years): Graft function, rejection, infection, malignancy, chronic rejection

Underlying disease

Pre-transplant comorbidities

"John Smith is a 37-year-old man who is 6 months post bilateral lung transplantation for cystic fibrosis, with a pre-transplant history of CF-related diabetes, recurrent DIOS, pancreatic insufficiency, hypertension and anxiety."

GRAFT FUNCTION

Lung: FEV1

- Home monitoring
- Formal RFTs in lab

Heart: TTE

Kidney: Creatinine and urinary protein

Liver: Transaminases, ALP, GGT, bilirubin

"Mr Smith's FEV1 is currently stable at 3.5L, with a post-transplant peak of 3.6L. He monitors his FEV1 at home 1-2 times per week and in the local lung function lab monthly."

REJECTION

Lung: Transbronchial biopsy

- Complications: pneumothorax, bleeding, infection

Heart: Endomyocardial biopsy, cardiac MRI

- Complications: tricuspid regurgitation

Kidney: Allograft biopsy

- Complications: bleeding, infection

Liver: Liver allograft biopsy + biliary tract Doppler

- Complications: bleeding, infection

"Mr Smith had two episodes of acute rejection at 4 weeks and 3 months post-transplant. The first was treated with an intravenous steroid bolus followed by an oral taper and the second with an increase in the oral prednisone dose followed by a taper. His last transbronchial biopsy was performed two months ago and did not demonstrate any rejection.

Mr Smith had a right-sided pneumothorax following a surveillance transbronchial biopsy approximately two months post-transplant, which required hospitalization and chest tube drainage."

ANTIBODY-MEDIATED REJECTION

Consider in highly sensitized individuals

Pre-transplant transfusion, pregnancy

Desensitization protocols at time of transplant

Treatment with plasmapheresis, IVIG, ATG, Tocilizumab, Rituximab

CHRONIC REJECTION AND GRAFT DYSFUNCTION

Lung: Chronic lung allograft dysfunction (CLAD): irreversible decline in FEV1 to <80% of the average of the 2 best post-transplant values

- Bronchiolitis Obliterans Syndrome (obstructive)
- Restrictive allograft syndrome (restrictive, radiographic abnormalities, bad prognosis)

Heart: chronic allograft vasculopathy

Kidney: transplant glomerulopathy

Liver: chronic rejection leading to obliteration of bile ducts and arterioles

Recurrence of underlying disease in transplanted organ

INFECTION

Bacterial: wound infections, catheter-associated infections, pneumonia, UTIs

Fungal: *Candida* species, *aspergillus*, mucor, *scedosporium*, PJP (rare with prophylaxis)

- interactions with calcineurin inhibitor if on azoles

Viral: CMV reactivation (CMV viremia vs CMV disease), respiratory viruses, BK virus (kidney), COVID-19

- CMV prophylaxis, leucopenia

Vaccination

MALIGNANCY

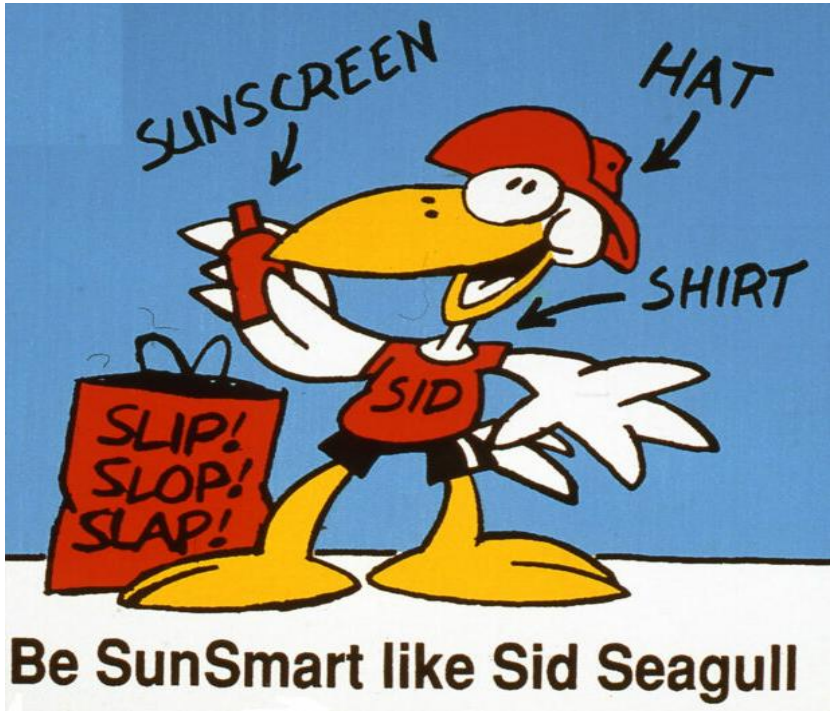
Skin

- Annual full skin examination
- Sun protection

Post-transplant lymphoproliferative disease

Usual malignancy screening:

- PSA
- Pap smears
- Mammography
- Bowel cancer screening



OTHER COMPLICATIONS

Diabetes

Osteopenia/osteoporosis

Hypertension

Dyslipidemia

GORD

Renal impairment

Leucopenia

Mental health

Underlying disease complications (e.g. DIOS in CF patients)

MEDICATIONS

Immunosuppression:

- corticosteroid, calcineurin inhibitor, cell cycle inhibitor +/- MTOR inhibitor
- Explain any variations
- Side effects and interactions
- Therapeutic drug monitoring

PJP prophylaxis

CMV or HSV prophylaxis

Lung: Azithromycin

Heart: statin, aspirin

PPI

Vitamin D and calcium supplements

Bisphosphonates

SOCIAL

Impact of frequent clinic visits +/- hospitalisations

Return to work/education

Family planning

Substance use (tobacco, alcohol, vaping)

Travel

"Mr Smith has returned to work four days a week as a web designer. He is planning to travel to New Zealand next year after his 12-month assessment. He drinks 1-2 standard drinks over the weekends. He denies any vaping or cigarette use."

EXAMINATION

Vital signs

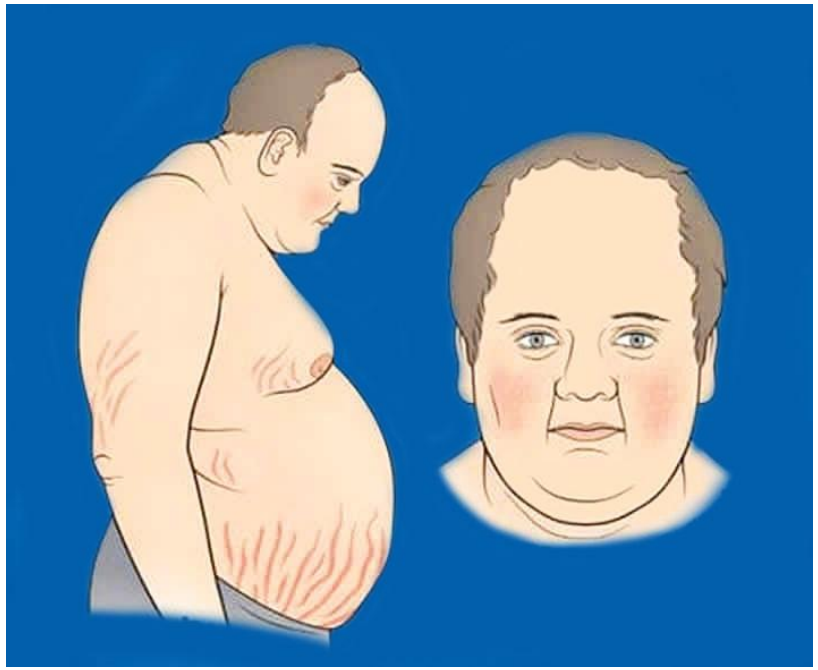
Organ-specific examination

Skin

Features of chronic steroid treatment

Scars, wounds

Weight/BMI



SUMMARY

"Mr Smith is a 37-year-old man who is 6 months post bilateral lung transplantation for cystic fibrosis. He appears to be doing well from a respiratory standpoint, with stable lung function. His current issues include:

1. Recurrent episodes of rejection potentially related to fluctuating Tacrolimus levels in the context of antifungal treatment with posaconazole
2. Gastroesophageal reflux disease which is not well-controlled
3. Weight gain
4. Insulin-dependent diabetes which predates his transplant and has been more difficult to manage in the context of corticosteroid use.

..."

GOOD LUCK!!!