

Lung Transplantation FRACP Clinical Exam Prep and Tips

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Introduction

- Long case = typical gen med/complex specialty patient
- Format of presentation → perfect admission
- Discussion is all about linking it back to the patient and real-life management issues and challenges
- Long cases 2020 → unprecedented format

Outline

- Indication for LTx
- Clinical history
- (Pertinent exam findings)
- Issues and discussion
- New therapies
- Other tips

Indication for LTx

ISHLT LTx candidate selection guidelines 2014

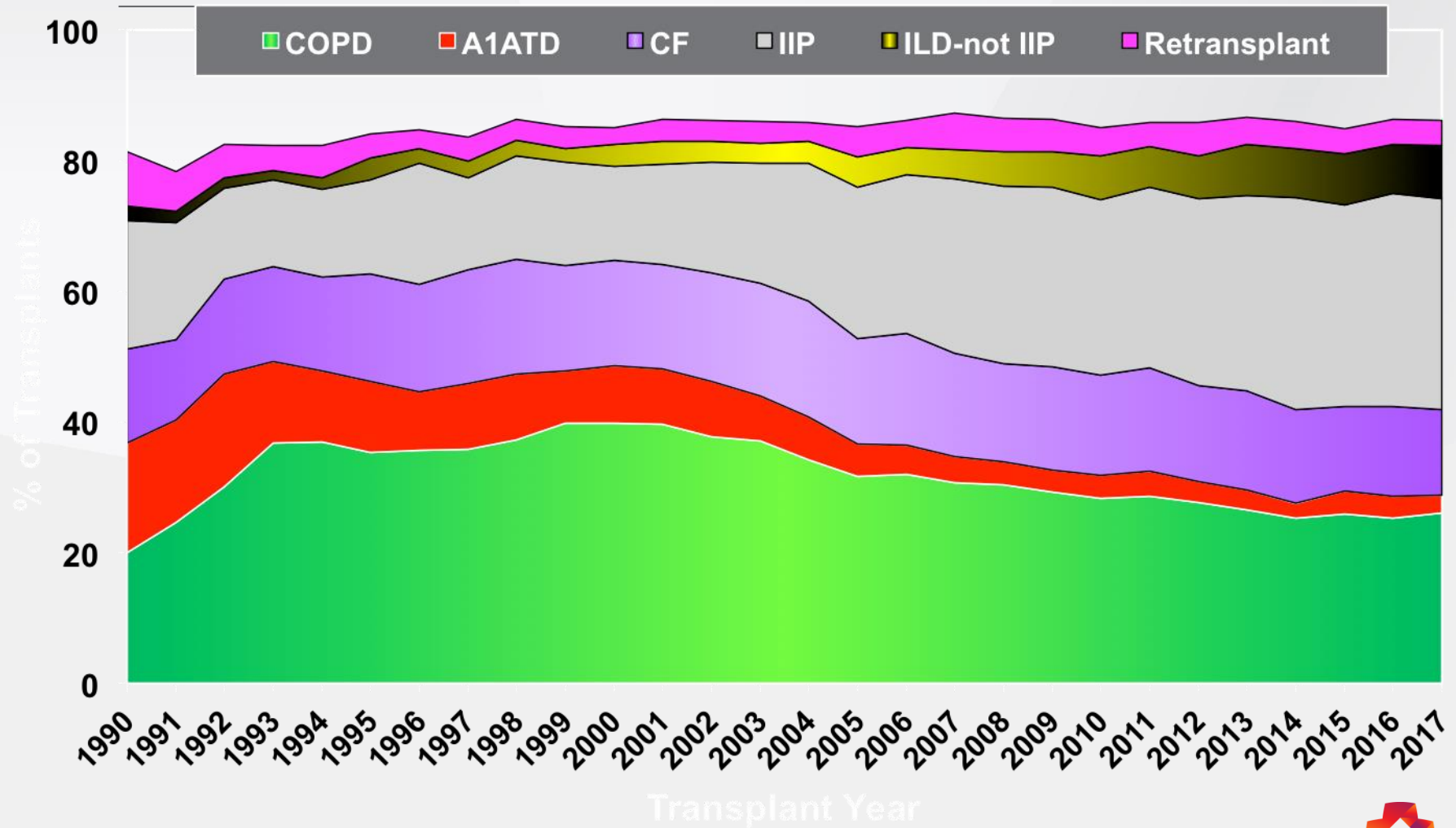
- Chronic end-stage lung disease with
 - High (>50%) risk of death from lung disease within 2yrs if LTx is not performed
 - High (>80%) risk of surviving at least 90 days after LTx
 - High (>80%) likelihood of 5 year survival from gen med perspective

Indication for LTx

- ILD – IPF and non IPF
- COPD
- CF
- Pulmonary vascular disease
- ReTx for CLAD

- (HLTx) – congenital HD with PVD
- Multiorgan Tx
 - Lung-kidney
 - Lung-liver

Adult Lung Transplants Major Diagnoses by Year (%)



Mechanical bridge to LTx

- ECLS support until LTx is available
- Consider
 - Young age (<50yrs)
 - Absence of multi-organ dysfunction
 - Good potential for rehab
- Not recommended
 - Septic shock
 - Multi-organ dysfunction
 - Prior prolonged mechanical ventilation
 - Advanced age
 - Obesity/frailty

Absolute contraindications for LTx

- Malignancy within 5yrs
- Untreated significant dysfunction in other organs (unless multi-organ Tx considered)
- Acute medical instability
- Uncorrected atherosclerotic disease
- Uncontrollable bleeding diathesis
- Chronic infection with virulent/resistant organisms
- Significant chest wall or spinal deformity
- BMI >35
- Non-adherence to therapy
- Substance abuse
- Psychiatric/psychological conditions a/s with inability to adhere to Rx/cooperate LTx care team
- Absence of reliable/adequate social support system
- Severely limited functional status with poor rehab potential

Relative contraindications for LTx

- Age >65 and low physiologic reserve and/or other relative C/I
- BMI 30-34.9
- Progressive and severe malnutrition
- Severe symptomatic osteoporosis
- Extensive prior chest surgery with lung restriction
- Mechanical ventilation or ECLS except in carefully selected candidates
- Colonisation with highly resistant/virulent organisms
→ infection with Burkholderia species, Mycobacterium abscessus
- Patients with hepatitis B/C can be considered in those without significant cirrhosis and stable on appropriate therapy
- Patients with HIV can be considered in those with controlled disease with undetectable VL and compliant with ARV, no current AIDS
- Atherosclerotic disease
- Other conditions that haven't caused end-stage organ damage optimized – DM, HTN, epilepsy, GORD, central venous obstruction

Clinical history

- Type of lung Tx (LTx)
 - Single
 - Double (bilateral sequential LTx)
 - Re-do
 - HLTx, multi-organ
- When
 - Time on waitlist
- Indication
 - ILD – IPF vs non-IPF (underlying CTD?)
 - CF
 - COPD
 - PAH (underlying CTD?)

Clinical history

- CMV and EBV serostatus
 - Antiviral prophylaxis
- Perioperative/postoperative course
 - Complications
 - Duration of ICU/hospital stay
 - Immunosuppression regime + PJP prophylaxis
- Progress
 - Infections – organisms
 - Rejection (CLAD) – clinical presentation, investigations, management
 - Lung function – peak and current, rate of decline
 - Functional capacity – exercise, return to workforce, QOL

Clinical history

- Complications of immunosuppression
 - CNI: Tacrolimus/cyclosporine
 - Antiproliferative: Mycophenolate/azathioprine
 - Prednisolone
 - MTOR inhibitors
 - Antifungals – azoles
- Compliance
 - Bloods, rehab, allied health, investigations/admissions
- Preventative health measures
 - Malignancy – skin, breast, cervical, colorectal, prostate, PTLD
 - Cardiovascular risk factors

Clinical exam

- Surgical scars
 - Clamshell
 - Bilateral anterior thoracotomy
- Auscultation
 - Crackles
 - Inspiratory squeaks
 - If single LTx – underlying pathology in native lung
- Prednisolone SFX – Cushingoid features, BP
- Functional capacity – RR, WOB, Sats, sputum cup

Issues and discussion

- Fertility
 - Pregnancy contraindicated for females
 - Most females recover menstruation – contraception
 - Males often infertile (CF) → IVF
 - Need to review underlying immunosuppression
 - Advent of IVF and surrogacy
- Functional capacity – CLAD
 - Impact on QOL
 - Impact on carers
 - Burden of healthcare

Issues and discussion

Consideration of reTx?

- Contra-indications:
 - Smoking
 - ETOH or other substance abuse
 - Non-compliance
 - Other end-organ dysfunction (CKD)
 - Malignancy within last 5 years
 - Significant chest wall abnormalities (+spinal/venous)

Therapies - CLAD

- CLAD remains the major limiting factor to improved survival post LTx
 - 70% 5 year survival
 - Terminology and nomenclature has evolved
 - Phenotypes – obstructive vs phenotype
 - Defined by lung function and imaging
- CLAD phenotype doesn't predict therapies or response
 - T-cell vs B-cell (AMR)
- Therapies
 - Pulse methylprednisolone, ATG, ECP, Stem cell trial
 - AMR: Plasmapheresis, IVIg, +/- Rituximab/Bortezomib
 - Azithromycin, Montelukast

Therapies – other lung diseases

- COPD
 - Lung volume reduction: LVRS, valves, coils, steam
 - COPD/asthma overlap → biologics
 - “Personalised medicine” and “treatable traits”
- CF
 - CFTR gene modulators
 - Kalydeco (Ivacaftor) – 38 mutations
 - Symdeko (Tezacaftor/Ivacaftor) – F508del homozygotes
 - Trikafta (Elexacaftor/Tezacaftor/Ivacaftor) – F508del

heterozyotes

Therapies – other lung diseases

- IPF – antifibrotics
 - Nintedanib (INPULSIS trial)
 - Pirfenidone (CAPACITY and ASCEND trials)
- Other ILD
 - CTD related ILD: immunosuppression
- PAH - combination therapy is key
 - Nitric oxide, endothelin, prostacyclin pathways
 - ERA: bosentan, macitentan, ambrisentan
 - PDE5 inhibitors: sildenafil, tadalafil
 - Prostanoids: IV/inhaled
 - Oral prostacyclin antagonist: Selexipag
 - (Calcium channel blockers) - RHC vasodilator challenge

Other tips

- What are the key issues the patient identifies?
- What are the key issues you've identified?
- Discussion = linking it back to the patient
- How would you approach this/what would you do as a medical registrar?

Questions...

Thankyou and good luck!

