Table 1: Preparatory tests for LTX*.

- Lab tests with blood group, HLA typing, and anti-HLA antibodies
- Assessment of vaccination status, booster injection if necessary
- Pulmonary function tests: body plethysmography, measurement of diffusion capacity, and standardized exercise test
- Chest CT without contrast agent, preferably not older than 6 months
- Blood gas analysis at rest
- Current sputum culture
- ECG, echocardiography with evaluation of pulmonary artery pressure, and right ventricular function, Right heart catheter if necessary
- Assessment of nutritional status
- Abdominal sonography (including recording signs of portal hypertension), abdominal CT if necessary
- Gastroscopy and colonoscopy if necessary
- ENT examination, with sinus CT scan if necessary, throat and sinus swabs if necessary
- Bone density scan
- Gynecological/urologic screening
- Psychological assessment
- Dental examination
- Presentation at ophthalmologist
- Presentation at dermatologist
- Duplex sonography of the afferent arteries if necessary
- Peripheral closing pressure of the ankle arteries if necessary
(a) Absolute contraindications to LTX
(i) Malignant diseases in the past 2 years
(ii) Untreatable severe dysfunction of another important organ system (heart, liver, and kidney) not amenable to surgical correction/combined TX
(iii) Chronic, incurable extrapulmonary infection
(iv) Severe deformations of chest and spine
(v) Severe or symptomatic osteoporosis
(vi) Lack of adherence to therapy
(vii) Untreatable mental disorders combined with lack of cooperation
(viii) Addictive disorder currently or during the past 6 months

(b) Relative contraindications to LTX
(i) Age > 65 years
(ii) Critical/unstable clinical situation
(iii) Seriously limited functional status without potential for rehabilitation
(iv) *Colonisation with Burkholderia cenocepacia, Burkholderia gladioli and Mycobacteria abscessus*
(v) Diseases not optimally treated (e.g., arterial hypertension, diabetes mellitus, GERD, osteoporosis, and coronary heart disease)
• With rising numbers of CF patients testing positive for nontuberculous mycobacteria, particularly M. abscessus, clinicians should maintain a high level of suspicion for disease caused by these organisms.

• The growing proportion of CF patients with M. abscessus isolates may be related to the advent of chronic macrolide therapy, but further studies are warranted to clarify the association.

• Recognition of inducible macrolide resistance conferred by expression of a novel *erm* gene in certain subspecies of M. abscessus may help to tailor antibiotic regimens.
Case 10

- 19 year old female transferred from outside hospital for neutropenic fever, hypoxia and bilateral pulmonary infiltrates
- Past medical history: refractory Hodgkin lymphoma and stem cell transplant 2 weeks prior to this lung biopsy
Clinical Timeline

April 2010

**HL Dx**

ABVD for 6 months

HL Progression 2 mo later

March 2011

**March 2011 CT-Scan 1**

Mobilization Chemo (ICE)

**March 2011**

Salvage Chemo (GVD)

**May 2011 CT-Scan 2**

Autologous Stem Cell Transplant + BEAM

A = Adriamycin
B = Bleomycin
V = Vincristine
D = Dacarbazine

G = Gemcitabine
V = Vinorelbine
D = Doxorubicin

I = Ifosfamide
C = Carboplatin
E = Etoposide

B = BiCNU (Carmustine)
A = AraC (Cytarabine)
M = Melphalan
Clinical Timeline

April 2010

HL Dx

ABVD for 6 months

HL Progression 2 mo later

March 2011

March 2011

Salvage Chemo (GVD)

Mobilization Chemo (ICE)

Autologous Stem Cell Transplant + BEAM

May 2011

Lung Biopsy

A = Adriamycin
B = Bleomycin
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I = Ifosfamide
C = Carboplatin
E = Etoposide
A = AraC (Cytarabine)
M = Melphalan
What would you do next?
Case 10: Diagnosis

- Organizing intralveolar fibrinous exudate, chronic interstitial and airway lymphohistiocytic inflammation, and marked multifocal pneumocyte atypia, suggestive of drug reaction (Bleomycin)
Bleomycin toxicity
Bleomycin toxicity

- Bleomycin is a cytotoxic agent which is well-known for its pulmonary toxicity due to low levels of bleomycin hydrolase in the lungs.
- A minority of patients receiving bleomycin will develop pulmonary toxicity.
- Pulmonary toxicity is associated with high cumulative doses, smoking, elderly age group, renal dysfunction, previous bleomycin exposure, chest radiation, concomitant use of granulocyte colony-stimulating factor.
Bleomycin Induced Damage

Lungs Lack Bleomycin Hydrolase!!!
Bleomycin Induced Damage


Bleomycin Induced Damage

