with cystic fibrosis (CF). Their experience mirrors our own: distal intestinal obstruction syndrome (DIOS) can be as important an issue after transplant in individuals with CF as management of pulmonary complications. In the initial days after lung transplant, the combination of high-dose narcotics, postoperative ileus, poor oral intake, and bed rest creates a risk for DIOS that makes the estimate of 20% incidence seem optimistically low. Gilljam et al. wisely suggest “prevention and early medical treatment” to prevent DIOS after transplant, and report success with a routine of early enteral feeding and, if needed, administration of electrolyte GI lavage solution 24 h after transplantation.

We too have noted a dramatic effect of a preventive protocol on the incidence of DIOS after lung transplant in individuals with CF. We now start this preventive protocol prior to surgery. After having three consecutive CF lung transplants complicated after surgery by DIOS, we adopted a protocol that included all individuals with CF awaiting lung transplant having access at home to polyethylene glycol lavage solution (GoLytely; Braintree Laboratories; Braintree, MA). As soon as they are contacted to come to the hospital for their transplant because donor lungs are available, they immediately drink 2 L of polyethylene glycol lavage solution. Combining this approach with the steps recommended in the article by Gilljam et al. has virtually eliminated the incidence of DIOS in our CF population immediately after transplant. This protocol has been adopted by other transplant centers, including the University of North Carolina at Chapel Hill, with similar success. Initial concern about patients drinking a large volume of liquid prior to surgery has been tempered by the much less complicated postoperative courses and the observation that several hours invariably lapse between patient notification and actual surgery.

The principles of prevention and early treatment espoused by Gilljam et al. can be extended to apply to all surgeries in individuals with CF in which surgery will likely be followed by narcotic use and postoperative adynamic ileus. After having postoperative DIOS occur in individuals with CF undergoing cholecystectomy and other abdominal surgeries, we have now made pretreatment with polyethylene glycol lavage solution a standard part of preoperative preparation.

Kudos to Dr. Gilljam and coworkers for their thorough review of an underrecognized complication of CF. By applying their principles of prevention and early treatment for DIOS, we should be able to dramatically decrease the incidence of GI complications not only after lung transplantation in CF, but after all surgeries.

Michael P. Boyle, MD, FCCP
Johns Hopkins Adult CF Program
Jonathan B. Orens, MD, FCCP
Johns Hopkins Lung Transplant Program
Baltimore, MD

Erkan Yildirim, MD
Ankara Numune Education and Research Hospital
Ankara, Turkey

Reference


Does the Predicted Postoperative FEV₁ Formula Reflect the Real Value?

To the Editor:

I have just read the article by Beckles et al. titled “The Physiologic Evaluation of Patients With Lung Cancer Being Considered for Resectional Surgery.” There was described a formula for calculating the percentage of predicted postoperative (ppo) FEV₁ after lobectomy: ppoFEV₁ = preoperative FEV₁ × (No. of segments remaining/total No. of segments). For lobectomy, there is a strong correlation between the postoperative FEV₁ expressed as percentage of predicted and the actual values when the calculation is made depending upon the number of segments to be removed at lobectomy. The calculation needs to be modified if any segments are obstructed:

$$\text{epo FEV₁} = \text{pre-FEV₁} \times \left[\frac{(19-a)-b}{19-a}\right]
$$

where epo = estimated postoperative, and where a = the number of obstructed segments to be resected and b = the number of unobstructed segments to be resected, which can easily be determined by bronchoscopy.

In the first formula, the calculated ppo FEV₁ values are always almost 150 to 250 mL less than the values calculated by the second formula with the existence of obstructed segments. In both situations, the preoperative FEV₁ values are the same. This condition is very important for the patients with borderline preoperative FEV₁ values. The patients who are accepted inoperable according to the first formula may indeed be in the operable group. For example, a patient is being planned to undergo left upper lobectomy: a:2 and b:3. Preoperative FEV₁ value is 1.6 L. According to the first formula, ppo FEV₁ = 1.184 L; according to the second formula, epo FEV₁ = 1.315 L. The difference is 134 mL. The obstructed segments to be resected do not have any contribution to the preoperative FEV₁. So, only the unobstructed segments to be removed should be taken into account while calculating the epo FEV₁. As a result, the first formula does not reflect the real value. In conclusion, the second formula should be used to calculate the percentage of ppo FEV₁ in order to give the chance of operability to the patients with borderline respiratory functions.
