


Reassessing the Cost-effectiveness of Lung Transplantation

To the Editor:

In the interest of health economy and cost-effectiveness, we should probably all die in our sleep without the benefit of a call to 911. When an expensive therapy like lung transplantation is applied to a group of terminally ill individuals, it is difficult, if not impossible, to make an assessment of cost-effectiveness. Ramsey and colleagues (CHEST 1995; 108:1594-1601) have attempted to calculate the impact of transplantation on life expectancy and quality of life for those awaiting transplantation vs patients already with transplantation. What is peculiar is the life expectancy calculations for those awaiting transplantation (5.32±2.72 yrs). In our program, if we see patients with a life expectancy of 5 years, we do not list them for transplantation.

It is difficult to predict life expectancy accurately in patients with emphysema. For other forms of end-stage lung disease, more reliable indices of life expectancy have been used. Thus, because emphysema was the indication for most of the transplants performed in this study, the findings may not be applicable to other types of patients awaiting lung transplantation.

Our institution has acquired considerable experience in performing transplants in patients with end-stage cystic fibrosis (CF). There have been more deaths on our waiting list among CF patients than deaths after lung transplantation from all causes combined. It is difficult to imagine that in this patient population a life expectancy without transplantation would be in excess of 5 years; indeed, most CF patients listed at our institution have an expected survival of less than 2 years without transplantation.

Perhaps the analysis should be directed at two populations of patients: those listed for lung transplantation because of an intolerable life-style vs those listed for lung transplantation with a short anticipated survival. The latter group would likely show an increase in anticipated survival (although at considerable cost), whereas the former group might realistically have lung transplantation deferred.

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To the Editor:

Dr. Egan has identified a key issue that we hoped to emphasize in our article: that different subpopulations are likely to achieve different levels of benefit from lung transplantation. We agree with his point. The primary benefit may be quality or quantity of life. In some cases, both aspects will improve, but in others (such as emphysema), even though quality of life increases, relative life expectancy may not.

Although our pilot study was too small for a meaningful subgroup analysis, our experience, together with published transplant and waiting list survival data, suggests that patients with idiopathic pulmonary fibrosis, primary pulmonary hypertension, and (possibly) cystic fibrosis stand to gain the most survival from the procedure, relative to the other eligible conditions. Interestingly, our data suggest (but do not prove) that quality of life after transplantation may depend on the patient’s pretransplant diagnosis.1

Although the proportion of lung transplants for the indication of emphysema in our sample was higher than the national average, the percentage of transplants performed for this indication has grown since the time of our study.2 In this respect, our overall cost-effectiveness ratio may be more representative than it was at the time of the original report.

Allocating scarce donor lungs involves ethical as well as economic considerations. Our study suggests that the cost-effectiveness of lung transplantation would improve today if donor lungs were preferentially allocated to patients on the waiting list with a predictably short life expectancy, and to those who stand to gain the most quality of life from the procedure. Unfortunately, we have little information to determine who benefits most, in terms of survival and quality of life, among the many patients who are eligible for this procedure. We caution against the use of clinical impressions. It would be useful to have data to support Dr. Egan’s observations. Further research is needed to determine the survival quality of life, and cost impact of lung transplantation as a function of pretransplant diagnosis. Cooperative data collection from multiple institutions will be more efficient than single-institution studies like ours. Such information would be of tremendous value to physicians, patients, and policymakers who must make the difficult decisions of allocating this scarce resource among the few desperate people.

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REFERENCES


Shame on Us

To the Editor:

Once again we in the medical community (especially medical and surgical chest) have let a new procedure get away from us. With lung resection surgery, we had a chance to thoughtfully evaluate its place with randomized controlled studies. Instead, we have a feeding frenzy of every thoracic surgery program in the country wanting to “get in on it” before their patients go elsewhere.

Now, it will take years to sort out who truly benefits and who does not. In the meantime, there may be thousands of people who could