

Lung Allocation Working Group – Report for CTAG April 2018

A Lung Utilisation group was set up after the meeting of CTAG in September 2017, chaired by John Dark, and with a member from each lung transplant centre. All members but one were physicians

Background

The French Agence de la Biomedecine (ABM), which has some analogies to ODT, has published criteria for Standard, Extended and Marginal donor lungs. A Standard lung is defined as

- Age < 55
- Non-Smoker
- Chest X-ray described as “normal”
- At least one arterial PO₂ > 40KpA
- No history of Aspiration

In France, utilization of these lungs is of the order of 90%. It applies only to lungs from DBD donors

We have previously examined utilization rates for these lungs over past years in the UK. In very broad terms, for the years 2009-2013, there were 335 DBD lungs which fulfilled all the criteria, and we only used 205, ie 61%.

130, or about 25 a year, were not used. Lungs where age, PO₂, smoking history and chest-X-ray description were missing were excluded completely.

In 2014, there were a total of 77 donors. which either met all the criteria or had only aspiration data missing. 45, (58%) were transplanted, and 32 not

The utilisation appears to have been falling in more recent calendar years

Consented DBDs where lungs offered:

Calendar year	<i>Ideal criteria met</i>				<i>Ideal criteria not met</i>			
	<i>Used</i>		<i>Unused</i>		<i>Used</i>		<i>Unused</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
2015	57	62.6	34	37.4	95	21.5	347	78.5
2016	44	61.1	28	38.9	94	20.3	370	79.7
2017	46	50.5	45	49.5	111	22.8	376	77.2

Current Analysis

There were some delays in getting the process started, and then an initial analysis suggested far fewer Ideal Donors. The first teleconference, in January 2018, looked at just 6 unused ideal donors from the 4 months, September-December

On reviewing the data to investigate this surprising finding, we discovered some coding issues had meant there was a failure to identify all the donors who fulfilled criteria.

With the new data collection, we identified 40 donors in a 5 month period who fitted into the French “Ideal Donor”.

At the second teleconference, in early March, the remaining 10 unused donors from the months September to December, were analysed, together with three more from January.

Finally, the three unused donors in February were discussed at the end of March, at the third teleconference

The overall figures can be shown as

	<i>Total lung tx (DBD and DCD)</i>	<i>Total Ideal Donor</i>	<i>Unused Ideal Donor</i>
<i>September</i>	23	11	6
<i>October</i>	10	7	3
<i>November</i>	18	11	6
<i>December</i>	13	5	3
<i>January</i>	22	6	1
<i>February</i>	18	8	3
<i>March</i>	21	7	2
<i>Total</i>	125	55	22

Analysis of 22 Unused Donors

Ten donors turned down for very good reasons – infant donor (size), HCV positive, severe unexplained weight loss, PE's on CTPA, donor was haemodynamically unstable, and offering sensibly withdrawn, donor had rheumatoid-related lung fibrosis found only at retrieval and two donors had undiagnosed meningo-encephalitis. Another was found to have extensive and unexpected adhesions at retrieval

Two others were unused because of no recipient – a tall group B and a large single group A lung, only identified in theatre

However, the group felt that lungs from the remaining **10 donors** could possibly have been used. Some were marginal decisions, but in others there was clear-cut poor decision making

There was a clear suggestion of unsatisfactory offering in some donors, where a centre well down the sequence did not receive a re-offer when the primary centre declined

Another issue was that a decision by a transplant or retrieval team was regarded as final, when others might have had a recipient. With an increasingly relaxed attitude to ischaemic time, some of these donors could be offered on, even at a late stage.

At the final teleconference, two other donors fulfilling all criteria but with age up to 75 were discussed. Both had age as at least one of the reasons for turn down, which is disappointing given the recent extension of age range up to 75 for non-smokers

Some Lessons learned:

1. *A young donor with Core-Antibody Positive but Surface Antigen negative, and a history of IV drug abuse, was turned down by every centre. Many recipients accept a*

sero-negative donor with IV drug use history. We do not have good UK data on the likely risk of transmission of a blood-borne virus

2. *Frozen section of a lesion in a non-smoker turned out to be benign, but lung not used. It was always likely that the lesion would be benign. Lung was not offered on.*
3. *No bronchoscopy in a donor with a history of aspiration, but normal PO2 and X-ray. The group concluded that it should be a routine to only turn down such lungs after bronchoscopy*
4. *Good right lung, as identified in theatre, was offered at a late stage. It is disappointing that no recipient could be identified. This is either an issue of listing, or offering*
5. *Post-trauma haematoma, in a donor with good gases and clear X-ray turned down by primary team and not offered on. Should this have been discussed more widely?*
6. *Possible infection, with same bug in blood and sputum, but otherwise good, and might have been a reasonable risk for a septic recipient*
7. *Resource Issues, with already transplanting or lack of ITU beds, in flu epidemic, occasionally impacts on the use of even ideal organs*

Limitations with the process

1. Collecting the data and particularly arranging the teleconferences has been labour intensive; we are very grateful to Sally Rushton and Lucy Newman
2. The group is largely physicians, a reflection of who attends CTAG-Lung, but the donor decisions are almost entirely surgical. Latterly the core group was joined by recipient coordinators, who added a very useful perspective. It would potentially be much more valuable to have surgeons involved
3. There are very few robust indicators of a “good” lung, so identification of lost opportunities is subjective

Conclusions

Lung Utilisation is imperfect and may be worsening. We revealed an unwillingness to even look at some potentially good lungs, and perhaps ignorance of current practice and Guidelines. Flaws in the offering process may be losing some opportunities. There is a sometimes an unwillingness to seek second opinions.

Even within this limited analysis, if *all* the lungs felt potentially useable by the group had resulted in a transplant, there would have been a 8 % increase in activity in the period under review.

For Discussion at CTAG

Roughly half of the lungs turned down by every centre were potentially usable. We have not examined turn-downs by individual centres, which might actually have a better educational use. It would be possible for the panel to adjudicate on all the ideal donor lungs not used at the first centre offered, and then to write to the Director asking for a formal reply as to why the lung was not used. The results would be presented at CTAG in the Autumn. For this to be fair, the panel should also contain surgeons and recipient coordinators.