

IMPROVEMENT IN SPIROMETRY POST LUNG TRANSPLANTATION

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It has previously been reported that following lung transplantation (LTX), the most dramatic improvements in spirometry occur in the first few months after surgery with results continuing to increase up to a year post operatively. In order to confirm this for TPCH LTX patients, a retrospective study of lung function data was conducted to determine the pattern of increase to maximum, and possible decline thereafter.

Spirometry results of all patients who received lung transplants at TPCH since procedures began in 1996 were collated and analysed. Pre transplant FEV₁ and VC were compared to post-operative values at 3 monthly intervals for the first year, then at yearly intervals. Changes in FEV₁ and VC over time were measured by transplant type and survival status. There was a total of 612 spirometry measurements from 7 Heart-Lung (HL), 73 Double-Lung (DL), 1 Heart-Liver-Lung (HLL) and 16 Single-Lung (SL) patients. For each type of operation and between each time interval, the means of the groups were compared using t-tests.

Improvement in FEV₁ for the HL-DL-HLL patients reached its peak value 6 months after LTX 1.85L(0.98(SD)) (n=69, p<0.05) as did the FEV₁ for SL patients 0.85L(0.51) (n=11, p<0.05). The VC was most improved at 9 months for both HL-DL-HLL patients 1.23L(1.00) (n=62, p<0.05) and SL patients 0.87L(0.54) (n=10, p<0.05). No statistically significant decline was seen in the FEV₁ or VC when comparing subsequent yearly intervals to the maximum values.

TPCH data supports the results of previous studies, showing that on average, patients reached their highest FEV₁ and VC at 6 and 9 months respectively post LTX. There was no statistically significant fall in lung function over time.

Key Words: Lung Transplantation, FEV₁, VC

