Airway clearance following lung transplant: Current UK practice

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Introduction

- Lung Transplant is an established treatment for individuals with end stage lung disease. Pulmonary complications remain a significant post-transplant problem and survival is inferior to that of other solid organ transplants[1,2].
- Management is multifaceted and an important component is respiratory physiotherapy, including airway clearance techniques[3].
- Despite literature to support the safety and efficacy of respiratory physiotherapy in other diseases there is limited published research to inform best practice following lung transplant.
- There are no available guidelines and there is minimal collaboration between specialist centres.

Aim

To describe current respiratory physiotherapy practice following lung transplant in adult and paediatric UK centres.

Method

Cross sectional, purpose designed, electronic survey.
Main outcome measures;

- Timing and frequency of respiratory physiotherapy
- Airway clearance techniques implemented

Purposeful sampling strategy - lead physiotherapists at the 5 adult and 2 paediatric lung transplant centres within the UK.
Self-administered survey and responses anonymous.

Results

- Completed surveys were received from 6 of the 7 centres, including both paediatric hospitals.
- Accounting for 140 transplants in the 2016 calendar year (Figure 1).
- Respiratory physiotherapy was initiated within 24 hours of transplant in 5 centres (Table 1).

Figure 1 – Types of lung transplant completed by responding centres in 2016

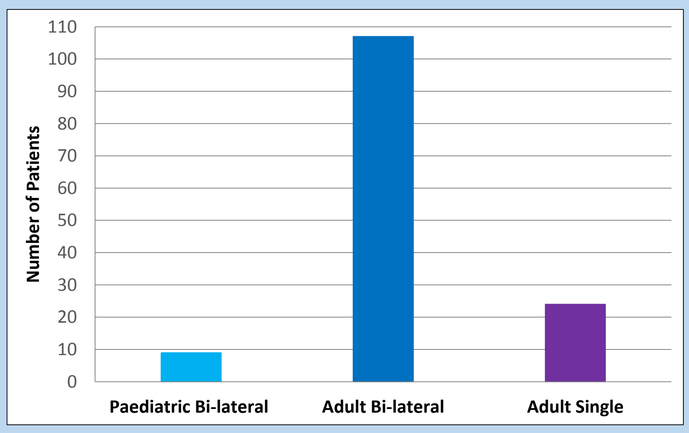


Table 1 – Timing of initiation of respiratory physiotherapy

Time Frame	Number of Centres
<24 hours post-transplant	5
24-48 hours post-transplant	1

- Minimum frequency of input was once a day in all centres (Table 2).
- Additional input was based on clinical need.

Table 2 – Frequency of input by centre (physiotherapy contacts per day)

Centre	Whilst intubated and ventilated	Once extubated
1	2	≥ 2
2	≥ 1	≥ 1
3	≥ 1	≥ 1
4	≥ 1	≥ 1
5	1	1-2
6	2	2

- All centres commence physiotherapy whilst the patient is intubated and ventilated.
- All centres use airway clearance techniques following lung transplant.
- The techniques used are displayed in Figures 2 & 3.
- Whilst the patient is intubated and ventilated all centres use ETT suction, only the paediatric centres complete manual techniques.
- Once extubated ACBT, mobility and suction are used by all centres.

Figure 2 – Airway clearance techniques used whilst intubated & ventilated

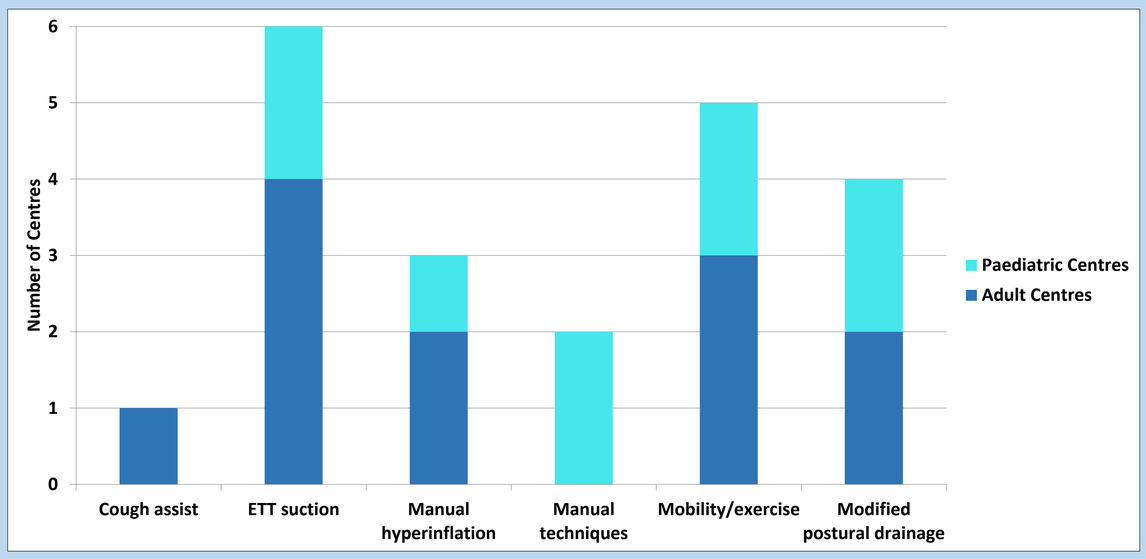
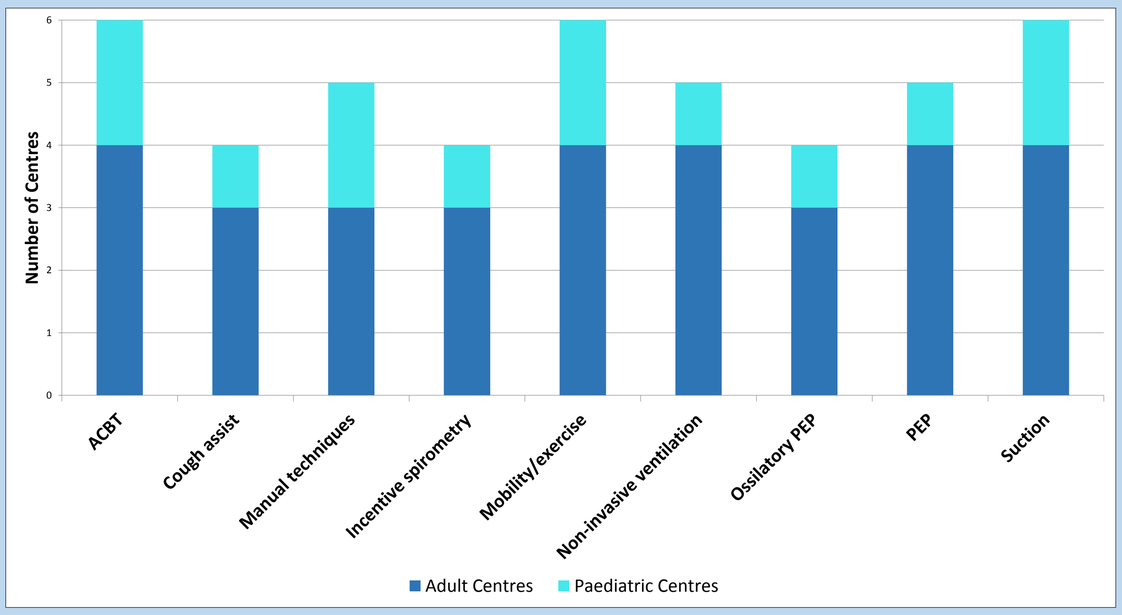


Figure 3 – Airway clearance techniques used once extubated



Two adult centres avoid;

- Nasal suction due to the risk of cross infection

One adult centre avoids;

- Manual techniques for 6 weeks post surgery

Conclusions

- All of the specialist centres surveyed complete respiratory physiotherapy, including airway clearance, following lung transplant.
- The frequency and timing of input is comparable between centres.
- A wide range of airway clearance techniques are implemented.
- Variations were observed between centres, with additional differences in the adult and paediatric groups.

Implications

- This is the first study to report on post-operative respiratory physiotherapy following lung transplant in the UK.
- A number of areas warrant further investigation;
  - Comparison of the different types of airway clearance techniques
  - The differences in practice between adult and paediatric populations
- Improved sharing of information and increased collaboration may impact individual practice and facilitate the development of guidelines.

References

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