Discussion

Intrapulmonary percussive ventilation is frequently used in clinical practice to increase airway clearance and lung recruitment in patients with respiratory disease. However, the evidence in different respiratory pathologies, especially as regards children, is still lacking [1].

A recent review suggests that the systematic use of IPV as an airway clearance technique in chronic obstructive airway diseases is not supported by sufficiently strong evidence to recommend routine use in this patient population [2]. However, many authors propose IPV as an airway clearance technique that may offer valuable assistance in the treatment of severe respiratory diseases refractory to conventional respiratory therapy techniques [3,4]. One study in cystic fibrosis patients demonstrated that IPV at high frequency increased FEV_1 and forced vital capacity compared to other techniques [5].

In this subject, the introduction of IPV in physiotherapy management contributed to i) reducing the frequency of intravenous antibiotic use: zero times/years *versus* three times/years; ii) reducing the need to be hospitalized: zero times/years *versus* three times/years; iii) improve radiologic features (Figure 1); iv) reducing big airways mucus plugging of the left upper lobe (33-66% *versus* >66%); v) reduction of big and small airways mucus plugging of the left lower lobe (<33% *versus* 33-66%).

In our clinical practice, IPV is widely used in the pediatric intensive care unit; for at-home treatment, this device is used only in selected patients when other techniques are not efficacious. The complexity, size, and difficulty of adjusting the equipment must be considered for daily use. It is also not possible to set a standard setting because the system is dynamic and changes in relation to pulmonary resistance in the same session.

Patients with chronic respiratory disease, such as CF, generally prefer devices that encourage independence, are easily transportable, and are easy to clean, such as positive pressure devices.

Conclusions

Intrapulmonary percussive ventilation, in our experience, can be used in CF patients who are resistant to traditional physiotherapy techniques, particularly those who are not candidates for treatment with new *CFTR* modulators.

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