Future Bronchoscopic LVRS

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A number of theoretical concepts exist to support the possibility of endoscopic procedures that would achieve functional benefits similar to surgical lung volume reduction. These procedures include endoscopic closure of anatomical airways with occlusive implants, or techniques that open extra anatomical airway passages. Several case series showed that bronchoscopic lung volume reduction with occlusive implants can work and seems to be safe. However, it appears that the procedure does not work in every patient and a test to predict success remains elusive.

The development of next generation valve implants that are easier to insert, but also easier to remove makes possible a trial of treatment and selection of patients according to treatment response. In this scenario, valves are retained only in patients who show a good functional improvement, while in those who do not respond the devices are removed at one month. Moreover, the use of adjuvants, such as thermoreversible gels, may open up the possibility of locally administered diseased modifying treatments in conjunction with endobronchial implants.

In addition, new tests, endoscopic or non invasive, are developed and under trial to detect segments or regions of the lung that should be targeted by bronchoscopic LVRS. The proposed tests vary from very simple but ingenious, like intrabronchial sound assessment, to complex and expensive, like magnetic resonance scanning of lungs ventilated with hyperpolarised helium.

In conclusion, the area of bronchoscopic LVRS is expanding as a new branch in interventional bronchoscopy, with interesting new developments. More research is necessary before BLVR becomes an established clinical practice.