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# Bronchoscopy and bleeding risk

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Two new reviews of antithrombotic agents give recommendations regarding use in bronchoscopy patients <http://ow.ly/2c7q30cObBt>

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To examine the airways in a minimally invasive fashion, bronchoscopy is the most used technique worldwide. Although the first bronchoscopy was a therapeutic one for the removal of a foreign body, until the 1970s the technique was more or less for diagnostic indications [1]. However, in recent years, bronchoscopy has experienced rapid development. More and more interventional techniques have been introduced, offering new options for patients [2]. In the early 2000s, endobronchial ultrasound-guided transbronchial needle aspiration was established, and cryoprobes are nowadays the preferred option for establishing the diagnosis of interstitial lung diseases [3]. Additionally, various therapeutic techniques for emphysema patients, such as valves, coils, vapour or foam, as well as ablation options for asthma patients (thermoplasty), have shown their efficacy in randomised trials. Furthermore, the potential next options for earlier-stage chronic obstructive pulmonary disease patients (targeted lung denervation) and chronic bronchitis (spray cryotherapy) are currently undergoing trials [4]. The concept of re-biopsies in advanced lung cancer patients in the case of tumour progression is also more frequently used. Hence, the numbers of bronchoscopy procedures are increasing worldwide.

Bronchoscopy, flexible as well as with interventional intent, is usually a safe procedure, with complications such as bleeding, respiratory depression and pneumothorax occurring in <1% of cases. Mortality is rare, with a reported death rate of 0–0.04% in a large number of procedures [5]. Unfortunately, in the case of an acute massive iatrogenic haemoptysis after biopsy or intervention, a life-threatening situation associated with a high mortality rate might develop. The main threat in the acute phase is asphyxiation, resulting from flooding of the airways and alveoli with blood. Maintenance of airway patency and control of bleeding are therefore the primary goals, followed by identification of the site and the underlying cause of bleeding [6].

In addition to this type of case, the population is getting older and older. This is accompanied by an increase in comorbidities; in the case of lung-diseased patients, this is mostly an increase in cardiovascular comorbidities. A lot of these lead to the need for antithrombotic agents, both anticoagulants and antiplatelet therapies. In this area, the options are growing rapidly, with more and more medications becoming available on the market. Combinations of various pharmacological medications, especially after interventional cardiological procedures, are more common.

But how should we handle these therapies before a bronchoscopy? In articles published in the current issue of the *European Respiratory Review*, ABUQAYYAS *et al.* [7] and PATHAK *et al.* [8] have focused on this

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problem. Each team concentrated on a different type of endoscopy (flexible diagnostic *versus* therapeutic), and summarised the available literature surrounding the safety of using antiplatelet and anticoagulant therapies. Using classical search strategies, they analysed the evidence and have made recommendations based on the evidence available.

Both articles are very helpful for our daily practice. Recommendations are made, when literature is available, and the easy-to-read articles provide guidance for our pre-procedural behaviour. However, the authors also clearly state where there is missing evidence for a lot of new drugs and drug combinations. It is up to the endoscopic community to report their experiences and increase our knowledge of the rapidly evolving new antiplatelet and anticoagulant drugs.

## References

- 1 Herth FJF, Beamis JF, Ernst A. History of rigid bronchoscopy. *In*: Beamis JF, Mathur PN, Mehta AC, eds. *Interventional Pulmonary Medicine*. New York, Basel, Marcel Dekker Inc., 2004; pp. 1–13.
- 2 Gompelmann D, Eberhardt R, Herth FJ. Interventional pulmonology procedures: an update. *Panminerva Med* 2013; 55: 121–129.
- 3 Falcone F, Fois F, Grosso D. Endobronchial ultrasound. *Respiration* 2003; 70: 179–194.
- 4 Koegelenberg CF, Slebos DJ, Shah PL, *et al.* Time for the global rollout of endoscopic lung volume reduction. *Respiration* 2015; 90: 430–440.
- 5 Wahidi MM, Herth FJ, Ernst A. State of the art: interventional pulmonology. *Chest* 2007; 131: 261–274.
- 6 Tukey MH, Wiener RS. Population-based estimates of transbronchial lung biopsy utilization and complications. *Respir Med* 2012; 106: 1559–1565.
- 7 Abuqayyas S, Raju S, Bartholomew JR, *et al.* Management of antithrombotic agents in patients undergoing flexible bronchoscopy. *Eur Respir Rev* 2017; 26: 170001.
- 8 Pathak V, Allender JE, Grant MW. Management of anticoagulant and antiplatelet therapy in patients undergoing interventional pulmonary procedures. *Eur Respir Rev* 2017; 26: 170020.