

Above cuff vocalisation in tracheostomy patients: benefit vs. risk

Research strategy

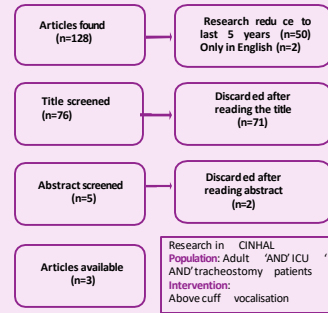
Between 10% to 15% of ICU patients struggle to communicate verbally, especially when they have had a tracheostomy (Veenith et al, 2008).

A trachi is an artificial airway that support patients for prolonged mechanical ventilation, via an **inflated cuff** that creates a positive pressure in the lungs but excludes airflow to the larynx where the vocal cords are (Klompas et al, 2014).

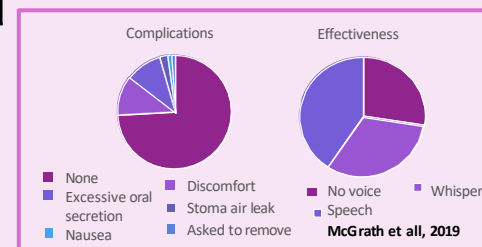
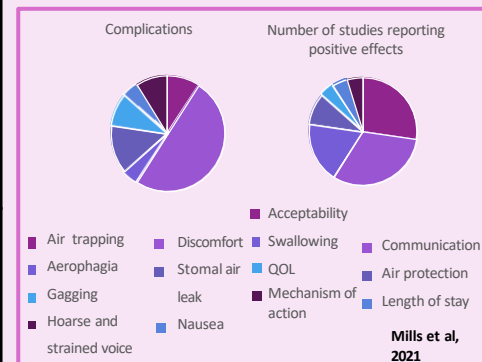
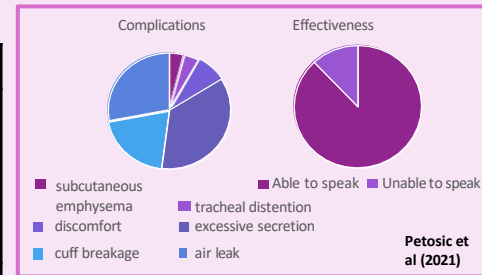
Tracheostomy with a **subglottic port** can be used to remove secretion above the cuff. If a gas flow (air or oxygen) is attached to the port, **flow to the larynx** will be re-established, improving oropharyngeal and laryngeal sensation (Frost et al, 2013); (Zaga et al, 2019).

There is still no protocol available used in our trust.

The **ACV (above cuff vocalisation)** can be used as an **alternative tool for communication** when patient is not ready for the PMV (passy muir valve) or in addition to the PMV.



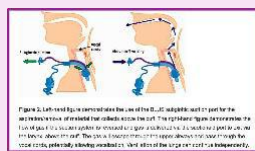
Study	Population	Results
Petotic et al (2021) Above cuff vocalisation: a scoping review	231 patients in total HTA at Oslo University Hospital. >14 years old	The scoping review resulted in the expansion of knowledge on ACV Detailed descriptions improves the replicability of the ACV Analyse the QOL, more specifically the VR-QOL (p=0.01) and the QOL-MV (p=0.04). GRADE for speech rated as Moderate
Mills et al, 2021 Evidence for Above Cuff Vocalization in patients with tracheostomy: a systematic review	13 studies from USA, UK, Japan, Denmark and Italy published between 1983 and 2019. Total of 143 patients with a median sample of 10 and age range between 19 to 83.	The diversity of the studies made impossible the realisation of a meta-analysis. Involvement of SLT for assessment Use of systematic approach and registered protocol Data extraction and RoB analysis ACV trial has been started between 48-72 hours after the insertion of the trachi or when the stoma was well healed. RCT reported improvements in the VR-QOL (p=0.01) and in the QOL-MV (p=0.04)
McGrath et al, 2019 Safety and feasibility of above cuff vocalisation for ventilator-dependant patients with tracheostomies	Patients from general and cardiothoracic ICUs. Total of 74 patients were provide with trachi over 5 months. 10 finished the study >16 years old	Protocol was prepared at the Tracheostomy Review and Management Service (TRAMS), Austin Healthcare, Melbourne Australia P < 0.05 Flow between 5-15L/min (regulated with a thumb-port) was able to provide voice to the majority of the patients. Each session with ACV should last 15 minutes, every 2 hours



Discussion

Some studies suggested that ACV was able to improve communication for the large majority of patients, excluding the one with a neurological condition. However, they demonstrate that in this study group, the ACV helped with secretion management, even in unconscious patients (Mills et al, 2019).

Above cuff vocalisation has been found to improve both VR-QOL and QOL-MV at the same time, voice has been produced in 72.5% of the patients as reported by McGrath et al, 2021 (Mills et al, 2019) (Petotic et al, 2021).



Conclusion

The data required careful interpretation because of the small sample size and methodological issues (Mills et al, 2019). Thus, for these reasons, further research on the topic with larger and higher quality studies is required.

The ACV could help in facilitating the communication between nurses and patients, whenever a cuff down is not tolerated or as an alternative during rest period.

The use of ACV could be applied in our unit as well as shown in the PDSA cycle:

