

Above Cuff Vocalization (ACV) Safety Guidelines

Above cuff vocalization (ACV) involves applying a retrograde flow of gas through the subglottic port of a tracheostomy tube to restore laryngo-pharyngeal airflow. This can support vocalization and improve airway protection and swallowing despite cuff inflation.

However, clinical practice varies, safety concerns exist, and standard safety guidelines are available.

A nominal group technique approach was used to generate and achieve consensus on a range of safety guidelines statements with a group of eight international clinical and academic ACV experts. Participants included: one occupational therapist, one physician, one physiotherapist, and four speech and language therapists. Six participants were from the UK and one from Denmark. This study was funded and supported by Atos Medical, UK.

1 The professional(s) involved in ACV assessment should be competent in complex dysphagia assessment, tracheostomy management, and assessment of voice and communication.

2 All staff assessing and delivering ACV should be trained and have completed ACV competencies.

3 Separate competencies are needed for assessment of ACV and delivery of ACV.

4 The contraindications for ACV are: complete lack of upper airway patency; bleeding from stoma; surgical emphysema.

5 The precautions for ACV are: pain on application; glottic/supraglottic bleeding; oedema in the pharynx/larynx; secretions emerging from the stoma site; partial lack of upper airway patency; tracheostomy tube not in optimal position; granulation tissue; previous history of surgical emphysema.

6 Assessment of airway patency and safety should involve: review of airway history; FEES/FNE if indicated; assessing patient comfort during ACV; monitoring for audible/tactile airflow on ACV application; gradual increase of flow rate starting at 1 L/min.

7 The upper limit for airflow delivery should be 5 L/min.

8 The maximum duration of airflow delivery should be 15 minutes per session.

9 Airflow delivery for ACV should only be delivered intermittently using a thumb port ensuring that airflow is stopped during swallowing.

10 Patients should be continuously observed throughout ACV sessions.

11 The following should be monitored as a possible sign of adverse effects: bleeding in subglottic port or around the tracheostomy stoma; significant pain associated with ACV; bleeding from stoma; airflow out of stoma; high levels of patient discomfort; subcutaneous emphysema; unresolved excessive coughing; no vocalization despite attempts.

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