A standard for performing percutaneous tracheotomy

P Jackson, A Mitchell, D Noble
General Intensive Care Unit, Aberdeen Royal Infirmary

Introduction
Tracheotomy is a procedure commonly performed in patients in the ICU, with up to 24% of patients being ventilated by a tracheotomy [1]. Historically, surgical tracheotomy (ST) was the standard technique; however, since the mid-1980s percutaneous tracheotomy (PT) has become the preferred procedure in suitable patients. PT is safer than ST in suitable patients and can be performed at the bedside [2] (Figures 1 & 2). At present, although there is guidance for the performance of the procedure [3], there is little guidance as to patient preparation, staffing and what level of anaesthetic monitoring and recording is appropriate to safely carry out this procedure in the ICU.

Methods
We performed a questionnaire survey of consultant and senior registrar level intensivists and anaesthetists in a tertiary centre teaching hospital.

Results
We received 40 responses from 78 people (51 %), the majority of whom were anaesthetists (26; 65 %). The remainder were either intensivists or dual qualified. Thirty (75 %) of responses were from consultants. To perform the procedure safely respondents felt that other than the person performing the tracheotomy an anaesthetist, bronchoscopist, ICU senior (>ST5) and ICU nurse should be present (% shown Figure 3). Continuous monitoring of S02, ETCO2 and ECG was considered mandatory by 36 (90 %) and BP by 38 (96 %). (Figure 4). Twenty-two (55 %) stated that observations should be documented every five minutes, with ten (25 %) every three minutes (Figure 5). Twenty-six (65 %) felt patients would require a full blood count and coagulation screen prior to proceeding, with 21 (53 %) requiring urea and electrolytes. Twenty-three (58 %) requested a group and save sample, whilst 11 (28 %) felt transfusion sampling was not required. Twenty-five (63 %) thought a six hour cessation of enteral feeding before the procedure is required.

Discussion
There was broad consensus across specialty and grade as to the minimum personnel required: being a bronchoscopist, anaesthetist, the operator and an ICU nurse. Continuous monitoring of S02, ETCO2, BP and ECG was almost universally proposed with a minimum documentation frequency of five minutes, consistent with national guidelines [4]. This was also the case for pre-procedure investigations. In practice, it is unlikely that minimum personnel and documentation are satisfactorily achieved. Now a standard has been developed (Figure 6) a retrospective audit of case notes is being performed.

References
3. Madsen K, Guldager H, Rewers M et al. Guidelines for Percutaneous Dilatational Tracheostomy (PDT) from the Danish Society of Intensive Care Medicine (DSIT) and the Danish Society of Anaesthesiology and Intensive Care Medicine (DASAIM), Danish Medical Bulletin 2011; 58: C435E
Figure 1 - www.encyclopedia.com/doc/1O82-percutaneous.html
Figure 2 - www.smith-medical.com/catalog/portes-percutaneous-tracheotomy-kits