Research Paper

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Medical Science

KEYWORDS :

Early Tracheostomy Versus Prolonged Intubation in Severely Ill Intensive Care Unit Patients

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ABSTRACT

Long-term mechanical ventilation is the most common situation where tracheostomy is indicated for patients in intensive care units (ICU). Fifty critically ill patients admitted to Medical ICU of Trauma centre of Sheth Vadilal Sarabhai General Hospital were selected to delineate the advantages and disadvantages over early tracheostomy and prolonged intubation respectively. Patients in whom the intubation is prolonged, certain complications are encountered. Morbidity and mortality are significantly reduced in patients whom the early intervention is carried out.

INTRODUCTION:

Tracheostomy is a surgical procedure where an external artificial opening is made in the trachea (windpipe). Long-term mechanical ventilation is the most common situation where tracheostomy is indicated for patients in intensive care units (ICU). The evidence on the advantages attributed to early over prolonged intubation is somewhat conflicting but includes shorter hospital stays and lower mortality rates.

AIMS AND OBJECTIVES:

- To compare the advantages of early tracheostomy versus prolonged intubation.
- To evaluate the effectiveness and safety of early (≤ 10 days after tracheal intubation) versus late tracheostomy (> 10 days after tracheal intubation) in critically ill adult patients predicted to be on prolonged mechanical ventilation and with different clinical conditions.

Ethical concerns:

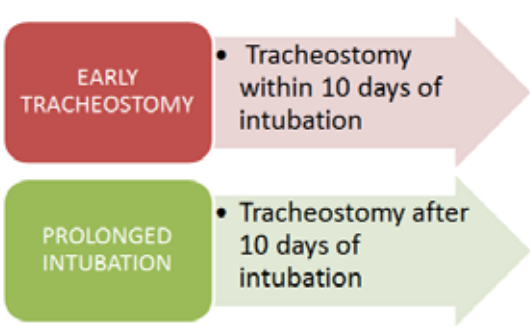
This was a retrograde observational study. No interventional procedure was carried out. Identities of patients were not revealed at any stage of the study.

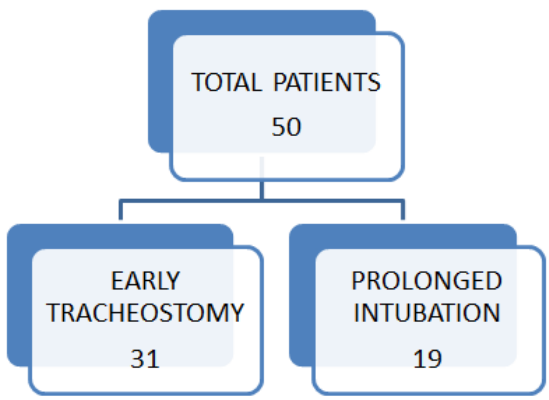
OBSERVATION:

Patients who were admitted in Medical ICU, Trauma centre of Sheth Vadilal Sarabhai General Hospital were considered in the study irrespective of the cause for tracheostomy/intubation. 50 patients were included in the study. 31 patients underwent early tracheostomy and the other 19 were on prolonged intubation. Early tracheostomy is, when the patients were taken for intervention within 10 days of intubation and prolonged intubated patients are those who are in mechanical ventilation for more than 10 days.

INDICATIONS FOR TRACHEOSTOMY:

Patients under this study were considered for tracheostomy for the following reasons:





- Head Injury
- Stroke
- IVH
- Septicaemia
- Neuromuscular diseases like GBS
- Aspiration Pneumonia
- Diaphragmatic Hernia
- Hemorrhagic Encephalitis

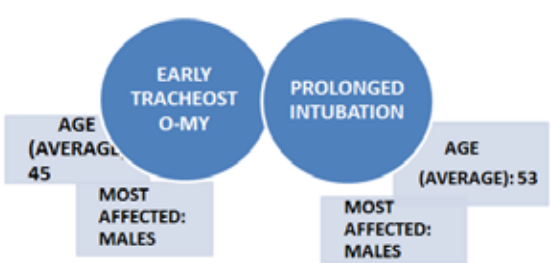
STATISTICAL ANALYSIS:

Inclusion criteria:

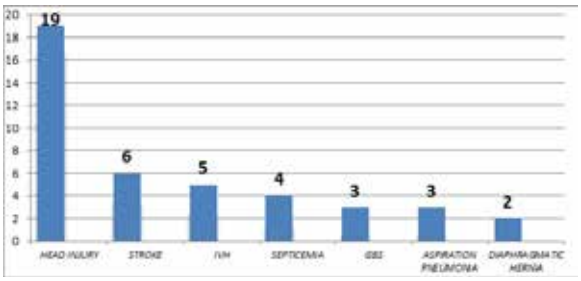
- Critically ill patients (for whom death is possible or imminent)
- Patients expected to be on prolonged mechanical ventilation

Exclusion criteria:

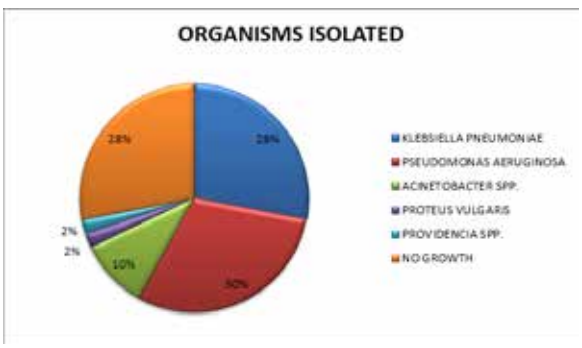
- Anatomical anomalies of the neck which would impair the tracheostomy procedure
- Patients already tracheotomised
- Coagulation disturbances (e.g., thrombocytopenia)
- Soft tissue infection of neck



INDICATIONS OF TRACHEOSTOMY CONSIDERED IN THE STUDY



Others - 8



ADVANTAGES OF EARLY TRACHEOSTOMY:

- Shorter ICU and hospital stays
- Shorter days of mechanical ventilation
- Less damage to mouth and larynx and reduced irritation

DISADVANTAGES OF PROLONGED INTUBATION:

- Ventilator Associated Pneumonia, Sinusitis
- Mortality
- Accidental extubation
- Tracheal stenosis

DISCUSSION:

Patients who underwent early tracheostomy had significantly reduced hospital mortality, pneumonia, ICU length of stay and duration of mechanical ventilation. Lesser damage to the mouth and larynx enhances better ability to communicate after closure of the tracheostomy wound. Infection rates were found to be lower in the cases of early tracheostomy.The timing of a tracheostomy in ICU patients in need of one has been a subject of controversy. However, an old adage states that 'the time to do a tracheostomy is when you first think of it'. This is true for all cases where tracheostomy is indicated.

CONCLUSION:

From this study, a tracheostomy performed early in a patient with upper airway obstruction improved survival but did not affect survival in patients with severe co-morbidity including possible iatrogenic injury. This is similar to the conclusion of Rumback et al. Use of the percutaneous dilatational technique which is associated with reduced complication and is technically easier to performed should be encouraged in our centre as this will also reduce the time to intervention as it can be performed by anaesthetists and other physicians.Thus, Early tracheostomy reduces the morbidity & mortality rate and also goes a long way in better patient tolerance, easier nursing care.

LIMITATIONS OF THE STUDY:

- Lacuna of specific objective criteria, making it difficult to determine precisely which patients should be selected for early tracheostomy.
- Limiting the generalize ability to patients with an expected mortality rate.
- Pre-existing community acquired and aspiration pneumonia at the time of admission.

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