

A comparison of early versus late tracheostomy after intubation for critically ill patients on long-term ventilation.

Submission date 23/01/2010	Recruitment status No longer recruiting	☐ Prospectively registered ☐ Protocol
Registration date 19/02/2010	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 19/02/2010	Condition category Surgery	☐ Individual participant data ☐ Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Prof Markus Weigand

Contact details
Rudolf-Buchheim-Street 7
Giessen
Germany
35392
Markus.Weigand@chiru.med.uni-giessen.de

Additional identifiers

Study information

Scientific Title
A prospective randomised trial to compare the effects early versus late Percutaneous Dilatational Tracheostomy (PTD) after incubation on the rate of Ventilator-Associated Pneumonia (VAP), mortality and other factors in critically ill patients on long-term ventilation.

Study objectives

Long-term ventilation in intensive care units is associated with several problems such as increased mortality, increased rates of ventilator associated pneumonia (VAP), prolonged time of hospitalisation, and thus, leads to enormous financial consequences. While the influence of tracheostomy on VAP incidence, duration of ventilation, and time of hospitalisation has already been analyzed in several studies, the point of timing of the tracheostomy procedure on patient's mortality is still controversial. Within 2 years, 100 critically ill, mainly surgical patients entered this prospective randomized study. A percutaneous dilatational tracheostomy (PDT) was performed either early (4 days after intubation, 2.8 days median) or late (more than 6 days after intubation, 8.1 days median) after intubation. We compared both groups concerning outcome, VAP incidence and duration of hospitalisation and ventilation. This was a cross-departmental trial with collaboration between the Dept. of Anaesthesiology, Dept. of Surgery Dept. of Neurosurgery and Dept. of Neurology.

Hypotheses:

1. Early tracheostomy is associated with a decreased mortality in critically ill surgical patients.
2. Early PDT performance, in comparison with late tracheostomy, is associated with decreased rates of VAP, duration of ventilation and time of hospitalization both in hospital and in (Intensive Care Units (ICUs).

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics approval was received by the Ethics board of the University Hospital of Giessen, Germany in January 2005.

Primary study design

Interventional

Study design

Single centre cross-departmental prospective randomised active controlled clinical trial

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Intensive Care Units (ICUs); Percutaneous Dilatational Tracheostomy (PTD); ventilatory support

Interventions

After intubation patients either entered the early (ET) or the late tracheostomy (LT) trunk of this study:

In ET patients a percutaneous dilatational tracheostomy was performed within 4 days after intubation/trauma/surgery in LT patients the same procedure was performed after more than 6 days of intubation.

The Acute Physiology And Chronic Health Evaluation II (APACHE II) score was used to define the severity of the trauma. In each group 25 patients with APACHE II < 25 and > 25 were recruited.

Patients were followed until discharged from the hospital or rehabilitation centre.

Intervention Type

Procedure/Surgery

Phase

Not Applicable

Primary outcome(s)

1. VAP as defined by
 - 1.1. Clinical Pulmonary Infection Score (CPIS)
 - 1.2. Sequential Organ Failure Assessment (SOFA) score
2. APACHE II score
3. Simplified acute physiology score (SAPS)
4. Temperature
5. Laboratory values
 - 5.1. C-Reactive Protein (CRP)
 - 5.2. Leukocytes
6. Thoracic X-ray
7. Days in ICU/hospital
8. Hours of ventilatory support

APACHE II score was measured at baseline, all other outcomes were measured daily.

Key secondary outcome(s)

None

Completion date

02/01/2007

Eligibility

Key inclusion criteria

1. Critically-ill patients requiring ventilatory support and intubation, recruited from the following three ICUs: surgical, neurological, neurosurgical.
2. Expected time of ventilation > 21 days
3. Age > 18 years
4. Informed consent that the patient may be included into the study

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

All

Key exclusion criteria

1. Anatomic variants or deformities of the larynx, trachea, and collum
2. Pre-existing tracheostomy
3. Pre-existing pneumonia
4. Critical trauma of the cervical vertebral column
5. Coagulopathy (thrombocytes < 60,000 per µl, prothrombin time > 40 seconds, international normalized ratio > 1.4)
6. Estimated to die within the next 24 h
7. Planned permanent tracheostomy (after laryngectomy)
8. More than 3 days of ventilation before entry into the study

Date of first enrolment

02/01/2005

Date of final enrolment

02/01/2007

Locations

Countries of recruitment

Germany

Study participating centre

Rudolf-Buchheim-Street 7

Giessen

Germany

35392

Sponsor information

Organisation

University Hospital of Giessen (Germany)

ROR

<https://ror.org/032nzv584>

Funder(s)

Funder type

Hospital/treatment centre

Funder Name

University Hospital of Giessen (Germany) - Department of Anaesthesiology and Intensive Care Medicine

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration