EARLY VERSUS LATE TRACHEOSTOMY IN CRITICALLY-ILL STROKE PATIENTS: ABOUT 55 PATIENTS.

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ABSTRACT

The aim of this study was to clarify the effect of early tracheostomy performed before the seventh day of endotracheal intubation on the future of patients with severe strok to its acute phase regarding weaning from mechanical ventilation, incidence of nosocomial pneumonia and the intensive care stay.This is a retrospective study of 55 patients with severe stroke patients in acute phase of complicatedof consciousnessalteration. These patients were divided into two groups: the group1, or early tracheotomy group where patients underwent a tracheotomy made between the 5th and 7th day after intubation and the second group or late tracheotomy group or it was performed between the 10th and 15th day post-intubation. Comparing the two groups focused on the duration of mechanical ventilation, the incidence of nosocomial pneumonia and the length of stay in intensive care.The authors found a significantly lower incidence of nosocomial pneumonia and durations of mechanical ventilation and ICU stay shorter than in group 2.The implementation of early tracheostomy is recommended at the acute phase of severe stroke. It decreases the incidence of nosocomial pneumonia, helpto weaning from mechanical ventilation and improves prognosis in these patients.

Keywords : Early tracheostomy. Late tracheostomy. Nosocomial pneumonia. Weaning from mechanical ventilation.

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INTRODUCTION

Stroke (CVA) is a global public health problem and are responsible for 10% of global mortality from all causes. This is the fourth cause of death in the Western world and the leading cause of acquired motor disability in the elderly.
Endotracheal intubation in these patients keeps the airway preventing the risk of aspiration pneumonia and good tissue oxygenation. But endotracheal intubation is not uncomplicated: It increases the risk of nosocomial pneumonia, extending durations of mechanical ventilation and ICU stay and generating an additional cost in management. It may be responsible for laryngeal trauma, tracheal stenosis or fistula in addition to risk of accidental extubation [1,2]. It is in this context that the tracheotomy can be performed. It facilitates nursing care, weaning from mechanical ventilation, improves patient comfort, and allows for early rehabilitation in allowing early oral feeding [3,4].

The moment of realization is however subject of discussion. Traditionally, the tracheotomy is performed after failure of one or more attempts of breathing cessation. More rarely, it is immediately performed in patients whose foreseeable duration of ventilation is long. [5] The authors compare the early to the late tracheotomy tracheotomy in a population who have experienced a severe stroke which the risk of inhalation and prolonged ventilation are particularly high.

MATERIALS AND METHODS

It is a retrospective comparative study, conducted in the medical intensive care unit of the military hospital of Marrakech between 1 March 2014 and 1 March 2015. 315 patients were admitted to the medical intensive care unit and pathology Cerebrovascular has represented more than a quarter of these admissions or 79 patients. Were included all patients who were admitted for severe stroke ischemic and / or hemorrhagic confirmed by CT or magnetic resonance imaging. The severity can be chosen before a neurological NIHSS score $\geq$ 17 [6] or a Glasgow Coma Score (GCS) $\leq$ 8, as it can be independent of brain pathology (ischemic heart disease or rhythm ...). Were excluded from the study patients who died during hospitalization and those in it are not used tracheostomy. The data collected from patient records were included age, sex, presence of chronic diseases (diabetes, hypertension, ischemic heart disease, renal failure ...). The management of time is the time between onset of symptoms and arrival deficit between ICU admission. When the stroke occurred during sleep, the start time is counted from the last hour and the patient was seen without deficit.

In all cases, tracheostomy was performed in the operating room by an ENT surgeon. The moment of realization was variable from one patient to another and depended on the patient and his family agreement. In all these patients were increased the time between intubation and performing a tracheotomy. The durations of mechanical ventilation and ICU stay were also noted. The ventilator associated pneumonia in these patients were defined by the onset of fever> 38.3ºC, purulent bronchorrhea, leukocytosis and infiltrates on chest radiograph. Data analysis was performed using SPSS 20.0. The comparative analysis between the two study groups was calculated by the chi-square test for nonparametric variables and Student t test for parametric variables. P values <0.05 were considered statistically significant.

RESULTS AND DISCUSSION

55 patients were included in this study. The average age was 65.5 years (with extremes ranging from 31 to 76 years). Patients between 60 and 76 years accounted for 68%. The sex ratio is 1.29. 70% of patients had a cardiovascular risk factor. The clinical characteristics of these patients are summarized in Table I.

Age (years)	65,5 ± 11
Male n (%)	31 (56,3)
High blood pressure n (%)	35 (63,6)
Stroke n (%)	10 (18,8)
Diabetes n (%)	16 (29,1)
Smoking assets n (%)	13 (23,6)
Heart disease n (%)	45 (81,2)
IRC n (%	3 (5.45)

Table I: epidemiological and clinical characteristics of these patients

The neurological picture is dominated by deep coma with a GCS ≤ 8retrouvé in 23 patients (42%). The NIHSS scale (NIH Stroke Score) correlated to the volume of infarcted brain tissue measured on the CT performed on day 7 [7] discloses a score 19 ± 6.

Intubation was immediately indicated in 47% of patients because of a GCS ≤ 8 or inhaled or cardiopulmonary tare.

Time management (minutes)	285±152
Coma n (%)	23 (42)
NIHSS score	19±6
Hemiplegia n (%)	12 (21,8)
Hemiparesis n (%)	9 (16,4)
Aphasia n (%)	6 (10,9)
Facial paralysis n (%)	3 (5,4)
Intubation immediately n (%)	29 (47,2)

Table II: neurological symptomatology at admission

Two groups of patients can be individualized. Group 1 or early tracheotomy was performed between 5th and 7th days after intubation. She was motivated by an expected long-term mechanical ventilation (due to the severity of neurological involvement or associated defects) and a group 2 said late tracheotomy or she was carried out between the 10th and the 15th day after the intubation. The incidence of ventilator-associated pneumonia (VAP) is twice as high in the early tracheotomy group than in the late tracheotomy group (21% vs 44%).

	Groupe P1 (n=31)	Groupe P2 (n=24)
Bronchorhée	9 (29)	15 (62,5)
Fever (t °> 38 ° C 3/10) n (%)	10 (32)	17 (70,3)
Average leukocytosis (GB / ml)	8900 ± 2140	13100 ± 5400
PaO 2 / FiO 2 (mm Hg)	380 ± 67	272 ± 60
Rx abnormal chest n (%)	7(22,5)	11(45,8)

Table III: diagnostic Arguments of VAP in both groups

The duration of mechanical ventilation was 7.4 ± 2.1 days in the group P1, while it reached 19.7 ± 4.4 days in the P2 group.

The ICU length of stay was 11.2 ± 1.6 days in the group P1. She spends 27.5 ± 3.7 days in the P2 group.

Tracheotomy achievement in ICU patients can improve respiratory mechanics, patient comfort and clearance of bronchial secretions. [8] Davis et al [9], studying the causes of ventilator weaning failure in 20 patients concluded that the work of breathing was significantly lower in the patient that the patient tracheotomy ventilated through an endotracheal tube and all patients weaned less than 24 hours after completion of the tracheotomy. The lack of consensus recommendations regarding the timing of its implementation, that its indication is mainly based on personal beliefs. There is no clear definition of "early tracheotomy" or "late tracheotomy." However, it is accepted that a tracheotomy performed by the end of the second week of mechanical ventilation is considered early. In a multicenter retrospective study of 152 ICUs, Blot et al report that the need for mechanical ventilation in the long term and extubation failure remain the main tracheotomy indications in the ICU patient [3].

Early tracheotomy has a beneficial effect for reducing mortality, the incidence of VAP, duration of mechanical ventilation and stay in the hospital stay in ICU [4].

CONCLUSION

Early tracheotomy among stroke patients in acute phase plays an important role in weaning from mechanical ventilation, improved oxygenation and reduces the incidence of hospital-acquired lung infections including ventilator-associated pneumonia, thus contributing to the improvement of pronstic in these patients.

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