Letter to the Editor

Bull Emerg Trauma 2014;2(3):136-137.

Bulletin of Emergency And Trauma

Perfect Timing of Tracheostomy in Patients with Traumatic Brain Injury

Shahram Paydar*[1], *Hosseinali Khalili*[2], *Seyed Mohsen Mousavi*[1]

[1]*Trauma Research Center, Shahid Rajaee (Emtiaz) Trauma Hospital, Shiraz University of Medical Sciences, Shiraz, Iran*
[2]*Shiraz Neuroscience Research Center, Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran*

***Corresponding author:** *Seyed Mohsen Mousavi*
Number 12, Shaghayegh alley, 59thsq, Narmak, Tehran, Iran. **Tel:** +98-912-3776901, **Fax:** +98-21-77924960
e-mail: mohsen_hawk@yahoo.com

Received: February 19, 2014
Revised: April 03, 2014
Accepted: April 18, 2014

Keywords: Deep brain stimulation; Traumatic brain injury; Persistent vegetative state; Behavioral changes.

Please cite this paper as:
Paydar S, Khalili H, Mousavi SM. Perfect Timing of Tracheostomy in Patients with Traumatic Brain Injury. *Bull Emerg Trauma*. 2014;2(3):136-137.

Dear Editor,

We would like to acknowledge Ziaeian *et al*. for their recent valuable paper, published in the July 2013 issue of your weighty journal, titled as "Short-term Outcome of Early Tracheostomy in the Trauma Patients Admitted to Intensive Care Unit: A Comparative Study" [1]. In addition, we postulate to raise some practical considerations.

While acknowledging what has been mentioned in this article about timing of tracheostomy in trauma patients, it ought to be mentioned that in our trauma center, which is a level I trauma center in Southern Iran with a heavy workload to contend with [2,3], and regarding our previous experiences, our decision about the perfect timing of tracheostomy in trauma patients depends on two main factors. The first factor is the pace of rising of level of consciousness with focus on patient's best motor response (according to Glasgow Coma Scale), and the second one is the success rate of the medical team in managing the primary shock state of the patient, regarding patient's amount of base deficit (BD) in the first 24 hours of admission.If both of the abovementioned factors were not satisfactory in a patient, due to our observations, it would be so unlikely for the patient to alleviate clinically and weaned off the ventilator in next 14 days. So in this case tracheostomy will be performed in the fourth or fifth day of ICU admission.However, if the shock state could be managed and corrected in first 24 hours of admission, and patient has only one (or no) blood gas analysis showing mild to moderate acidosis (or BD<–6), the only important factor would be the pace of rising of level of consciousness with focus on patient's best motor response. If the patient has had a motor response less than 4 up to the fourth day of admission, less than 5 up to seventh day or less than 6 up to the ninth day, he or she would be scheduled for the tracheostomy operation in the next day.

In this regards, Rizk and co-workers [4] evaluated the influence of tracheostomy timing on outcome after severe head injury. They included a total number of 3,104 patients with severe traumatic brain injury undergoing early (1 to 7 days after admission) or late (>7 days after admission) tracheostomy. They found that the strategy of early tracheostomy, particularly when performed on patients with a reasonable chance of survival, results in a better overall clinical outcome than when the tracheostomy is performed in a delayed

manner [4]. Alali *et al*., [5] in a recent study included 1,154 patients with traumatic brain injury. They showed with level II evidence that early tracheostomy was associated with fewer mechanical ventilation day, shorter intensive care unit stay, shorter hospital length of stay and lower odds of pneumonia, deep venous thrombosis and decubitus ulcer but no significant difference in pulmonary embolism. Hospital mortality was similar between both groups [5]. Taking all together, it seems that early tracheostomy should be suggested for patients with severe traumatic brain injury who have chance of survival.

Conflict of Interest: None declared.

References

1. Tahmasebi S, Niakan H, Fazelzadeh A, Ziaeian B. Early Tracheostomy in the Intensive Care Unit; a Challenging Dilemma. *Bull Emerg Trauma*. 2013;**1**(3):112-115.
2. Paydar S, Shokrollahi S, Jahanabadi S, Ghaffarpasand F, Malekmohammadi Z, Akbarzadeh A, et al. Emergency Operating Room Workload Pattern: A Single Center Experience from Southern Iran. *Bull Emerg Trauma*. 2013;**1**(1):38-42.
3. Abbasi HR, Mousavi SM, Taheri Akeri A, Niakan MH, Bolandparvaz S, Paydar S. Pattern of Traumatic Injuries and Injury Severity Score in a Major Trauma Center in Shiraz, Southern Iran. *Bull Emerg Trauma*. 2013;**1**(2):81-85.
4. Rizk EB, Patel AS, Stetter CM, Chinchilli VM, Cockroft KM. Impact of tracheostomy timing on outcome after severe head injury. *Neurocrit Care*. 2011;**15**(3):481-9.
5. Alali AS, Scales DC, Fowler RA, Mainprize TG, Ray JG, Kiss A, et al. Tracheostomy timing in traumatic brain injury: a propensity-matched cohort study. *J Trauma Acute Care Surg*. 2014;**76**(1):70-6; discussion 6-8.