

# Characteristics of Patients Undergoing Tracheostomy

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## ABSTRACT

**Introduction:** Tracheostomy is a technique used to treat patients with inadequate ventilation and upper airway obstruction.

**Purpose:** The purpose of the research is to obtain the tracheostomy action in Adam Malik General Hospital from January 2012 to December 2017.

**Materials and Methods:** This was a cross-sectional study of tracheostomy patients in Adam Malik General Hospital.

**Results:** : There were 159 patients underwent tracheostomy in the Department of Otorhinolaryngology-Head and Neck Surgery of Adam Malik General Hospital ranged 1 year to 85 years and male-to-female ratio was 4.9:1. The largest indication of tracheostomy actions was upper airway obstruction of 129 cases (81.1%). Elective tracheostomy is more common than emergency with 53.5% and 46.5% in sequence. The most common type of incision is horizontal incision with 97 cases (61%). Low location stoma was more frequent which was 95 cases (59.7%) than those at high (40.3%). From this research, 71 cases (46.7%) were found to be complicated, and 14 cases (8.8%) were performed by decannulation.

**Conclusion:** This research found out the illustration of tracheostomy in the Department of Otorhinolaryngology-Head and Neck Surgery of Adam Malik General Hospital from January 2012 to December 2017.

**Key words:** Characteristics, Otorhinolaryngology-head and neck surgery, Tracheostomy

## INTRODUCTION

Tracheostomy is a technique used to treat patients with inadequate ventilation and upper airway obstruction.<sup>[1]</sup> Respiratory failure is the most common cause of tracheostomy, and other things that may be indications such as loss of consciousness, poor airway defense reflexes, and drastic physiological changes associated with trauma and medical illness are also indications of tracheostomy actions.<sup>[2]</sup>

## MATERIALS AND METHODS

This is a cross-sectional study of patients undergoing tracheostomy in Adam Malik General Hospital. The

population is all patients who performed tracheostomy in the Department of Otorhinolaryngology-Head and Neck Surgery of Adam Malik General Hospital from January 2012 to December 2017. Samples were all patients who had a tracheostomy in Adam Malik General Hospital from the period of January 2012 to December 2017.

## RESULTS

There were 159 patients who performed tracheostomy (132 men and 27 women) with the youngest age of 1 year and the oldest 85 years with mean of 54.5 years [Table 1].

Airway obstruction is the most indication of tracheostomy with 129 patients (81.1%).

Elective tracheostomy is more prevalent compared with emergency tracheostomy as many as 85 patients (53.5%) and 74 patients (46.5%), respectively.

There were 71 cases (46.7%) found complication.

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**Table 1: Distribution of patients undergoing tracheostomy based on indications of tracheostomy**

Indications of tracheostomy	Years n (%)						Total
	2012	2013	2014	2015	2016	2017	
Upper airway obstruction	9 (69.2)	23 (82.1)	27 (90)	26 (78.8)	24 (82.8)	20 (76.9)	129 (81.1)
Bronchial toilet	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Prolonged intubation	3 (23.1)	2 (7.1)	0 (0)	2 (6.1)	1 (3.4)	0 (0)	8 (5)
Failed intubation	1 (7.7)	1 (3.6)	2 (6.7)	4 (12.1)	1 (3.4)	4 (15.4)	13 (8.2)
Respiratory installation	0 (0)	0 (0)	1 (3.3)	0 (0)	1 (3.4)	0 (0)	2 (1.3)
Mixed indication	0 (0)	2 (7.1)	0 (0)	1 (3)	2 (6.9)	2 (7.7)	7 (4.4)
Total	13 (100)	28 (100)	30 (100)	33 (100)	29 (100)	26 (100)	159 (100)

**Table 2: Distribution of patients undergoing tracheostomy based on execution time**

Execution time	Years n (%)						Total
	2012	2013	2014	2015	2016	2017	
Elective	7 (53.8)	15 (53.6)	18 (60)	18 (54.5)	14 (48.3)	13 (50)	85 (53.5)
Emergency	6 (46.2)	13 (46.4)	12 (40)	15 (45.5)	15 (51.7)	13 (50)	74 (46.5)
Total	13 (100)	28 (100)	30 (100)	33 (100)	29 (100)	26 (100)	159 (100)

**Table 3: Distribution of patients undergoing tracheostomy based on complication**

Tahun	n (%)						Total
	2012	2013	2014	2015	2016	2017	
No complication	9 (69.2)	15 (53.6)	20 (66.7)	15 (45.5)	13 (44.8)	16 (61.5)	88 (53.3)
Intraoperative complication	0 (0)	2 (7.1)	0 (0)	2 (6.1)	1 (3.4)	1 (3.8)	6 (3.8)
Intermediate complication	1 (7.7)	3 (10.7)	3 (10)	5 (15.2)	2 (6.9)	3 (11.5)	17 (10.7)
Late complication	3 (23.1)	8 (28.6)	7 (23.3)	11 (33.3)	13 (44.8)	6 (23.1)	48 (30.2)
Total	13 (100)	28 (100)	30 (100)	33 (100)	29 (100)	26 (100)	159 (100)

## DISCUSSION

Based on Table 1, it was found that the most tracheostomy indication was upper airway obstruction of 129 patients (81.1%). This is in accordance with research conducted by Sigdel *et al.* and Onakoya *et al.* where upper airway obstruction is the greatest indication of 34.3% and 61.45%, respectively.<sup>[3,4]</sup> This is different from the research of Fansula *et al.* where the installation of respiratory or bronchial toilet is the biggest indication that is as many as 141 patients (55.08%).<sup>[5]</sup> Meanwhile, according to Archarya *et al.*'s study, old intubation is the largest indication of as many as 12 patients (40%).<sup>[6]</sup> Based on Table 2, it can be seen that the tracheostomy performed by elective as a whole is more than the emergency tracheostomy performed by 85 patients (53.5%) and 74 patients (46.5%), respectively. This is in accordance with the research of Simbolon, the incidence of elective tracheostomy was more prevalent than the emergency tracheostomy with 52 cases (62.7%) and 31 cases (37.3%), respectively.<sup>[7]</sup> From Table 3, it was found that as many as 71 cases (46.7%) were found to have complications and 88 cases (53.3%) did not find any complications. This is similar to Onakoya *et al.*'s study where the percentage of tracheostomy patients with complications was 69 patients

(38.55%).<sup>[4]</sup> From this study, also known that age  $\geq 41$  years is the most common age group experienced complications (37%). Itamoto *et al.*'s study found that complications for tracheostomy were 11 (18.97%).<sup>[8]</sup>

## CONCLUSION

This research found out the illustration of tracheostomy in the Department of Otorhinolaryngology-Head and Neck Surgery of Adam Malik General Hospital from January 2012 to December 2017. The most tracheostomy indication was upper airway obstruction. The elective tracheostomy was more than the emergency. About 46.7% of patients got complications after tracheostomy actions.

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