

# PREDICTING FACTORS OF DECANNULATION IN CHILDREN WITH TRACHEOSTOMY

Fusun Unal<sup>1</sup>, Emine Atag<sup>1</sup>, Leyla Telhan<sup>2</sup>, Burcu Teber<sup>2</sup>, Fazilet Karakoc<sup>3</sup>, and Sedat Oktem<sup>2</sup>

<sup>1</sup>Istanbul Medipol Üniversitesi

<sup>2</sup>Istanbul Medipol University

<sup>3</sup>Marmara University School of Medicine

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## Abstract

**Objectives:** Our aim was to determine the treatable causes to increase the chance of decannulation success. For this purpose we evaluated the differences between the patients who successfully decannulated and the patients who still has tracheostomy. **Methods:** A retrospective cohort study was conducted based on medical records of all pediatric patients with tracheostomy in a single centre. **Results:** Decannulation was successfully achieved in 59 patients (34.5%) of total 171 patients with tracheostomy between the years 2012-2019. Median duration of tracheostomy was 41.5 and 12 months in patients who remained with tracheostomy and decannulated respectively. Neurological disorders were higher in patients remained with tracheostomy, congenital heart disease and airway abnormalities were higher in decannulated patients. Presence of bacterial colonization (3.8-fold), history of invasive respiratory support following tracheostomy (2.9-fold), and having any neurological disorder and/or comorbidity (5.2-fold) were significantly associated lower rates of decannulation. Almost 33 % of patients had bacterial colonization and colonization rates were higher in patients who needed invasive respiratory support following tracheostomy placement ( $p < 0.001$ ), patients with feeding/swallowing problems ( $p = 0.005$ ) and neurological disorders (0.002). There was significant correlation between duration of tracheostomy and bacterial colonization rates ( $p = 0.008$ ). But after analysing with logistic regression only having a neurological disorder was associated with bacterial colonization (OR= 2.9; 95% CI: 1.15-7.47  $p = 0.024$ ). **Conclusion:** While conducting decannulation assessment, the presence of colonization should be considered. Future prospective researchs are necessary in order to determine the role of chronic colonization on decannulation success.

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