

A Pilot Study on the Utility of Video Laryngoscopy for Emergency Intubation in Paediatric Population : Specialists Versus Medical Officers

Yap Hsiao Ling, Paediatric Emergency Department Hospital Tunku Azizah

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Introduction

Although difficult airway situations are rare in pediatric emergency intubation, the differences in the paediatric airway anatomy and respiratory physiology contributing to challenges for the clinician. Video laryngoscope (VL) was first commercially introduced in 2001, and has since gained traction in paediatric intubation. In Malaysia, direct laryngoscopy remains the gold standard for intubation, while VL is used as an alternative technique in paediatric difficult airway management in the operating rooms. During the COVID-19 pandemic, the Paediatric Intensive Care group of MOH Malaysia published an intubation protocol (2021) advocating the use of VL to minimize the transmission risk to the clinician intubating COVID-19 patients. Since 2020, the Paediatric Emergency Department (PED) of Hospital Tunku Azizah (HTA) started to change the emergency intubation practice to utilize VL due to the need to protect the healthcare providers from COVID-19 infections.

Objectives

To study the association of first attempt success rate, the difference of total intubation attempts between specialists and medical officers (MOs), and adverse events during emergency intubation using VL.

Methodology

This is a pilot retrospective observational study of emergency intubation of paediatric patients ranging from 0 - 18 years old in the PED HTA between January till June 2024. The primary outcome measured were the first pass success rate, number of attempts required and any adverse events.

Results

There were 58 emergency intubation events, 44 (75.8%) intubations utilized VL. Most of the intubations were performed by specialists (Specialists 27 vs MOs 17). The overall first pass success rate was 32/44 (72.7%, Specialist 17/27 vs MOs 15/17). 9 patients required 2 intubation attempts (Specialist 8/27 vs MOs 1/17) and 3 patients required 3 attempts (Specialists 2/27 vs MO 1/17). There were 13 adverse events recorded using VL (Specialists 9/13 vs MOs 4/13). The highest incidents are desaturations (8/13).

Conclusion

Trained MOs appeared to achieve higher first pass success in video-assisted laryngoscopy in emergency intubation in PED HTA with less adverse events. The outcome may be influenced by the MOs performed emergency intubation in selected cases with high probability of first pass success and will remain hemodynamically stable during intubation.

Keywords

Video laryngoscopy

Emergency Intubation

Paediatric

Paediatric Emergency Department