

DELIVERY ROOM MANAGEMENT

Videolaryngoscopy to Teach Neonatal Intubation: A Randomized Trial

Background

Intubation of a newborn remains a challenge for medical residents and neonatal fellows in the beginning of their fellowship with low success rates. According to the latest neonatal resuscitation guidelines less newborns require an intubation nowadays. That leads to even lower successful intubation rates from non-experienced medical staff, due to the lack of intubation opportunities. This study was designed to determine if an intubation from a pediatric resident using videolaryngoscopy under supervision of an experienced intubator (instructor) could improve these rates when the instructor was able to watch the videolaryngoscope screen (intervention group) in comparison with when the screen was covered (control group).

Summary of results

The primary outcome was first attempt intubation success. 213 intubation attempts in 168 infants were included. There were significant higher overall successful intubation rates when the instructor was able to watch the videolaryngoscope screen [(66% (69/104) compared with 41% (42/102), P, .001)]. These rates were also higher in premedicated and non-premedicated newborns [72% (56/78) compared with 44% (35/79) and 50% (35/79) compared with 30% (7/23) accordingly]. No significant differences were found in regard to lowest oxygen saturation, lowest heart rate and intubation duration between intervention and control group.

Strength

This is a well designed study conducted from experienced and well known researchers in the field of neonatal resuscitation. Apart from training purposes newborns could also benefit from a safer and faster intubation.

Limitations

The use of videolaryngoscope is rather expensive as mentioned by the authors. Low income countries and centers with limited budget could not afford the use of it. Additionally, the instructors were very experienced and well known neonatologists. It is not sure if the results were the same when the instructors were not so famous and well trained. Intubation durations were up to 70 seconds per attempt and in many cases above the 20 seconds intubation limit according to the American Academy of Pediatrics guidelines. Furthermore, the use of videolaryngoscope didn't seem to improve the intubation durations. Finally, it is not known how medical staff trained to intubate with the use of a videolaryngoscope could perform in situations where only a conventional laryngoscope is available.

Practical conclusion

Videolaryngoscopy seems to be a good option when it comes to intubation training of younger medical staff. However, the cost of it in relation to potential benefits make its use questionable.

O'Shea J. et al., Videolaryngoscopy to Teach Neonatal Intubation: A Randomized Trial. Pediatrics. 2015 Nov;136(5):912-9. doi: 10.1542/peds.2015-1028. Epub 2015 Oct 19.

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