Paediatric Emergency Department Intubation Audit

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Background

• Safety
  • Reported incidence of adverse events high
  • Predictability of adverse events unknown
  • Incidence of difficult laryngoscopy unknown
  • First pass success rate without desaturation / hypotension unknown

Aim

• Prospective description of practice and adverse events of endotracheal intubation in a large urban paediatric ED
Methods

• Prospective observational study
• Data recorded for all ED intubations including:
  • First pass success rate without desaturation or hypotension
  • Laryngoscopy grade (Cormack and Lehane)
  • Adverse Events
Degree of “unwellness” prior to intubation

- IV fluid / vasopressor support prior to intubation: 44%
- Desaturation (<90%) prior to intubation: 87%
- GCS <9 prior to intubation: 70%

Indication for intubation

- medical conditions (79%), most commonly status epilepticus (31%)
- trauma (21%), most commonly closed head injury (18%)
First pass success rate without Hypotension or hypoxia **49%**

- Overall first pass success rate **79%**

**Adverse Events during intubation**

- **Hypotension 21%** (risk factors - CVS compromise prior to intubation, fentanyl or no dose reduction in induction agent)
- **Desaturation (<90%) 14%** (risk factor - no apnoeic oxygenation)
- **Cardiac arrest 0%**

**Difficult Intubation**

- 7% required <2 intubation attempts
- 0% required >3 intubation attempts

**Difficult Laryngoscopy**

- 2/71 (3%), both neonates Cormack and Lehane grade 3 on initial laryngoscopy, improved view with ELM
Summary

• ED intubation in children is a low frequency, high risk procedure
• The patient group is unwell prior to intubation
• Incidence of unanticipated difficult laryngoscopy is low
• Incidence of adverse events is high and predictable
Conclusion

Avoidance of hypoxia and hypotension should be prioritised during the peri-intubation period.
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