

[Disadvantage of use of Neuromuscular Blockage Agents (NMBA) in Rapid Sequence Intubation (RSI) in Emergency Department and intensive care unit]**RESEARCHER:***Dr. Akram Kaid Al alsharabe**Consultant in emergency medicine and critical care**Al Thawra General Typical Hospital in Sanaa city, Yemen**Marib Authority Hospital Marib city, Yemen**Kara Hospital Marib city, Yemen**Shaikh Khalifa Hospital Socatra, Yemen***Abstract:**

This study aims to know the false use of NMBA in Emergency Department Intensive Care Units (ICU) in RSI.

As previously extensive studies about use of NMBA and their benefit for intubation in emergency Department and ICU leading to development of many scores for difficult intubation and scenarios of failure of oxygenation and ventilation and scenarios of difficult intubation. But no studies about harmful and complication of use NMBA in ED AND ICU.

Depending on my study and research and extensive and hard work in ED AND ICU for 14 years in FOUR hospitals in YEMEN from 2009 to 2023 and due to increase cases as result of War in yemen and my work in ED and ICU and meeting thousands of patients. I conclude that the use of NMBA strongly contribute to difficult intubation and scenarios of failed intubation.

المقدمة:

هذه الدراسة تهدف الى معرفه الاستخدام الخاطى للمثبطات العصبية الطرفية العلاجية في اقسام الطوارئ والعنايات المركزه في حاله ادخال انبوب رغامي لانقاذ حياتهم.

كما ان هناك دراسات مكثفه سابقه حول فوائد استخدام العلاجات المثبطه للاعصاب والعضلات وتطور عدد من المقاييس والمعايير والسيناريوهات في صعوبه تنبيب الرغامى الا انه ليس هناك دراسه عن اضرار وعيوب ومضاعفات استخدام هذه العلاجات.

فهذا البحث الذي اقدمه لكم اعتمد دراسه مكثفه وصعبه وطويله في اقسام الطوارئ والعنايات المركزه ولمده 14 سنه في اربعه مستشفيات يمنية منذ عام 2009 الى 2023 ونتيجته لظروف الحرب في اليمن فقد كانت الحالات في ازدياد.

ونتيجه لهذا كانت خلاصه البحث ان استخدام العقاقير المثبطه للاعصاب والعضلات لها اثر سلبي واسهمت في صعوبه ادخال الانبوب الرغامى.

Methods:*Dr. Akram Kaid Al alsharabe*

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Depending on retrospective and base evidence study for 1864 case intubated in ED and ICU. 1259 case was intubated by using sedation-hypnotic and analgesic drugs and 923 was reintubated by same medications and 336 case was reintubated using NMBA. The other cases 605 case was intubated by RSI using NMBA.

INTRODUCTION

Endotracheal intubation is lifesaving procedure in emergency Department and ICU but it can be difficult or failed depending on expert person or patient factors. Expert person also can't intubate in some circumstances but can deal with circumstance. Patient factors is the most important factors for intubation so that many scores for assessment of patient developed and many scenarios for difficult and failed intubation also developed. Many types of intubations is developing every time and new types will coming.

The most commonly method used is RSI in which they use 7P

1. Preparation.
2. Preoxygenation.
3. Pretreatment.
4. Paralysis with induction
5. Positioning
6. Placement of tube
7. Post intubation management

My research about use of NMBA in RSI as more than 1864 case intubated by using direct laryngoscope. 1259 case intubated using induction agent combined with benzodiazepines mostly midazolam with 334 case assessed as difficult intubation according to Mallampati scale and Cormack and Lehane grading system for glottic view but can intubate them, the most helpful factor in intubation is the visualization of part of vocal cord due to breath of patients or gashes of secretions that coming from trachea, other 935 case simply intubated.

A 605 case intubated using RSI with NMBA 244 case cannot intubated easily because of difficult visualization of vocal cord, 103 case cannot differential between Esophagus and Trachea, 141 case succeeded with time consumed and desaturated, 61 case reversed by neostigmine and use ambo bag and reintubated without NMBA, 55 case intubated successfully and easily using NMBA. ED physicians must be know which times avoid or use of NMBA for Endotracheal intubation.

DISCUSSION

Many researchers do extensive studies about use NMBA in intubation and concluded that NMBA facilitates endotracheal intubation but study was theoretically or in anaesthesia situation but our study depends on base evidence in ED and ICU.

Use of NMBA cause relaxation of skeletal muscles peripherally at Neuromuscular junctions of muscles fibers causing loss of muscles tone and paralysis.

Two types of NMBA are depolarizing and non-depolarizing, both exert action on motor end plate of skeletal muscle.

During given patient NMBA patient become paralyzed in seconds to minute and stop breathing so Endotracheal tube must be inserted rapidly to prevent brain hypoxia, if patient not evaluated for difficult intubation and scenarios of failed intubation and no will trained physician or absent expert physician in Endotracheal intubation the patient will deteriorate and desaturate, brain hypoxia is a serious complication unless the patient arrest.

The decision to use NMBA is difficult in case of emergency as reverse and abnormal scenario of patient become more difficult.

During study about 247 case has previously intubated without NMBA and admitted to ICU under Mechanical ventilation MV and was putting on NMBA for comfortable with mechanical ventilation and during change Endotracheal tube we find that difficult to visualization of vocal cord in patient with anterior airway and aspiration from gastric contents. 3 CASES was intubated and admitted in ICU on mechanical ventilation with use NMBA developed esophagotracheal fistulas. 12 case develop post extubation laryngospasm compared to 4 cases develop laryngospasm with no use of NMBA.

CONCLUSION

The use of NMBAs in ED for rapid sequence intubation RSI predisposes patients to many risks and complication because of the following factors,

- NOT KNOW the last meals of patient as coming as emergency case so that patient is risky for aspiration.
- NO availability of most train and expertise physician as most case intubated in ED by training physicians and time not enough to call will training physician this make patient predispose to desaturation and brain hypoxia.
- NO time to evaluate patient's airway for difficult intubation and scenarios of failed intubation so predispose patients to complication.
- USE NMBA are the predisposing factor for development of post extubation laryngospasm.
- USE NMBA predispose patient for esophagotracheal fistula.

- NMBA make patient more prone to pulmonary infection as it inhibit all natural defence mechanism. (That is in my next research paper).

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