

A CASE STUDY ON SEPTICEMIA AND REPORTING THE MEDICATION ERRORS AND DRUG INTERACTIONS

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ABSTRACT:

This case report is presented to increase the awareness among all the medical staff on importance of safe use of anesthetics and there combination with other drugs, with proper dosing many mortalities can be prevented as well as to show the importance of having complete knowledge on emergency medication (EM) by all medical staff.

In routine case study found some medication errors occurrence in critical patient which probably has contributed to death of the patient. A 55 year old male patient was diagnosed with septicemia , after patient stabilized in MICU was shifted to general medicine ward , on 2nd day suffered dyspnea, physician was not available through tele-communication nurse was ordered to intubate the patient, gave **wrong choice of drug**- nor adrenaline, **wrong dose of drug in this case** local anesthetic(vecuronium-12mg instead of 8.25 mg patient weight) for intubation, and **1 drug interaction** (between antibiotic and anesthetic) was found which prolonged the bioavailability of wrong drug chosen .

KEY WORDS: septicemia, vecuronium, tazobactam.

INTRODUCTION:

This case report is presented to increase the awareness among medical staff on importance of safe use of anesthetics and there combination with other drugs, with proper dosing many mortalities can be prevented.

In routine case study found some medication errors occurrence in critical patient which probably has led to death of the patient.

CASE PRESENTATION:

A 55yr old male patient with 55 kg was admitted in the hospital with the complaints of SOB & Cough since 15days, fever &night sweating. He has a history of DM-T2, Pulmonary TB, and Pneumonia. He is a chronic smoker & alcoholic. It was found that patient is suffering from septicemia & respiratory failure.

INVESTIGATIONS:

1. GRBS - 252mg/dl , intubation done , tidal volume – 500ml , respiratory rate – 15 breaths/minute .
2. X.RAY- inflammation of larynx, trachea associated with infection causing breath difficulties.

TREATMENT:

S.NO	BRAND NAME	GENERIC NAME	DOSE	FREQ.	ROA	PRESCRIPTION ERROR
1	Clavotec	Clavulinic acid + amoxicillin	1.2g	BD	IV	Frequency error
2	Duolin	Salbutamol	100mg	OD	NASAL	-----

3	Beudecort	beudasonide	500mg	OD	NASAL	-----
4	Razo	rabeprazole	40mg	OD	P/O	-----
5	Ascoril		10ml	TID	P/O	-----
6	Dolo	paracetamol	650mg	OD	P/O	-----
7	Human atropid	insulin	14u	OD	SC	-----
8	Vecuronium	Vecuronium bromide	12mg	OD	IV	Dose error
9	Midoz NS	midazolam	10ml	OD	IV	-----
10	Nor adrenaline		4mg	OD	IV	Wrong choice of drug
11	NaHCO ₃	Sodium bicarbonate	25ml	OD	IV	-----
13	Tazip	Piperacillin + tazobactam	4.5mg	OD	IV	Drug interaction with vecuronium
14	Moxifloxin	moxifloxacin	400mg	OD	P/O	-----

OUTCOME:

Patient died on the 2ND DAY.

DISCUSSION:

Patient was shifted from MICU to general ward after getting stabilized, on day 2 in general ward suddenly dyspnea occurred, physician was not available on time, nurse with tele-communication with physician gave medication but still patient expired. On our prescription analysis we explored some prescription errors which probably have led patient's death.

The dose of vecuronium injection was high which lead to reflux action leading to muscle constriction. Piperacillin & tazobactam showed drug interaction with vecuronium causing further prolongation of its effect. Concomitant administration of nor-adrenaline lead to further vasoconstriction. {3}

DOSING OF VECURONIUM FOR INTUBATION (NON EMERGENT)

LOAD: 0.08- 0.1 mg/kg IVP over 60 sec

OR

0.04-0.06mg/kg IVP if following succinylcholine. {2, 3, 4}

For our case the 2nd condition applies as nor adrenaline was given,

PATIENT AGE – 55KG as patient is underweight we will consider actual body weight instead of ideal body weight.

THEREFORE,

$0.04 \times 55 = 2.2$ mg (minimum dose)

$0.06 \times 55 = 3.3$ mg (maximum dose)

So vecuronium dose range for this patient to be given was 2.2- 3.3mg but gave actually 12 mg.

Note: for emergent intubation vecuronium dose is: 0.15mg/kg IV {2, 3, 4}

$(0.15 \times 55 = 8.25\text{mg})$

Then, also max. Dose 8.25 mg must have been given to patient but gave 12 mg of vecuronium.

According to literature overdose of vancomycin cause skeletal muscle weakness, decreased respiratory reserve, low tidal volume, and apnea. Adverse drug reaction of vancomycin is skeletal muscle weakness or paralysis, respiratory insufficiency or apnea, bronchospasm, hypotension, CV effects. {1}

CONCLUSION:

1. If the physician was aware that on vecuronium overdose reflux action of vasoconstriction will occur and ADR of dyspnea or apnea are already known for this drug then this would not have led to death.

2. If the physician was aware of the interaction between the piptaz with vecuronium which lead to increased bioavailability of the latter.

The dose would have been adjusted because ventilation to patient is 1st priority and 2nd is killing the microorganism.

3. concomitant administration of nor-adrenalin lead to further vasoconstriction and so as the patient was on anesthetic effect on ventilation was not able to breath due to dyspnea and tachycardia patient expired.

4. Administration of nor adrenalin is blunder mistake done by the nurse due to her less medical knowledge.

Appropriate management during that critical state of patient would have been administration of Atropine/ glycopyrrolate with a conjugant like edrophonium/ neostigmine/ pyridostigmine to antagonize the muscle relaxant effect { 1 }

5. Patient has so many other co-morbid conditions so we can't be certain enough to say the cause for his death but by literature review we can say most probably dosing error has played its major role in the death of the patient which could have been prevented.

6. This case report is presented to increase the awareness among medical staff on

a) Importance of safe use of anesthetics and there combination with other drugs, with proper dosing many mortalities can be prevented.

b) Importance on having complete knowledge on emergency medications (EM) by all medical staff.

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