Category : Miscellaneous

Title : Procedure for transfer of patients to gastrointestinal surgery ICU (Liver ICU) including the use of transport ventilator in case of emergency

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1. Table of Contents

1. Purpose:

The purpose of this Standard Operating Procedure (SOP) is to outline the procedure for transfer of patients from phase I unit to gastrointestinal surgery ICU (Liver ICU) including the use of transport ventilator.

2. Scope:

This SOP is limited to the procedure of transfer of patients from ward 24 or phase 1 unit in the event of emergency.

3. Responsibilities:

The PI and the study team members are responsible for the transfer of the patients to the Liver ICU.

4. Detailed instructions

1. In the event of an emergency occurring in ward 24 or phase 1 unit of Clinical Pharmacology, the patients will be immediately transferred and looked after in the Liver ICU of the Department of Surgical Gastroenterology (located on the same floor in the same building) by trained staff.
2. Attending Anesthetist or Intensivist on the duty is to be called.
3. A risk assessment must be undertaken and documented by Anesthetist or Intensivist to determine the level of anticipated risk during transfer.
4. The need of patient transfer from the ward 24 or phase 1 unit should be communicated to the Liver ICU in charge.
5. Availability of ICU bed should be confirmed prior to transferring the patient.
6. Patients should be appropriately resuscitated with basic life support and stabilized prior to transfer to reduce the physiological disturbance associated with movement and reduce the risk of deterioration during the transfer.

7. An appropriate carrier must be used if equipment is required during transfer e.g. oxygen carrier, drip stand.

8. Bag-valve-mask (BVM) ventilation technique is to be used to ensure oxygenation and ventilation of the patient during the transportation:

- In BVM ventilation, a self-inflating bag (resuscitator bag) is attached to a nonrebreathing valve and then to a face mask that conforms to the soft tissues of the face. The opposite end of the bag is attached to an oxygen source (100% oxygen) and usually a reservoir bag. The mask is manually held tightly against the face, and squeezing the bag ventilates the patient through the nose and mouth.

- Two-person bag-valve-mask (BVM) ventilation is used whenever possible. Bag-valve-mask ventilation can be done with one person or two, but two-person BVM ventilation is easier and more effective because a tight seal must be achieved and this usually requires 2 hands on the mask.

- *Positioning for BVM Ventilation:*

  - Position the patient supine and align the upper airway for optimal air passage by placing the patient into a proper sniffing position (Contraindicated in cervical spine injury) . Proper sniffing position aligns the external auditory canal with the sternal notch. To achieve the sniffing position, folded towels or other materials may need to be placed under the head, neck, or shoulders, so that the neck is flexed on the body and the head is extended on the neck. In obese patients, many folded towels or a commercial ramp device may be needed to sufficiently elevate the shoulders and neck. In children, padding is usually needed behind the shoulders to accommodate the enlarged occiput. In case of cervical spine injury position the patient supine or at a slight incline on the stretcher, avoid moving the neck and, if possible, use only

the jaw-thrust maneuver or chin lift without head tilt to manually facilitate opening of the upper airway

- Step by step description of BVM Ventilation
- Select a mask that fits over the mouth and nose but spares the eyes and start with two-person BVM ventilation
- One operator handles the mask, because maintaining a proper mask seal is the most difficult task. The second operator squeezes the bag.
- Stand at the head of the stretcher and have the second operator stand to the side.
- Using both hands, hold the mask between your thumbs and index fingers placed on either side of the connector stem.
- Making sure not to place your hands or the mask on the patient's eyes, first place the nasal portion of the mask over the nose high enough to cover the bridge without air leaks. Next, lower the mask over the chin and allow it to seal along the 2 malar eminences. Cover the bridge of the nose, the 2 malar eminences, and the patient's lower lip by the mask to achieve a proper seal. Stretching the internal portion of the mask before placing it over the nose and mouth can help create a tighter seal.
- Traditional hand placement is the "C-E" grip, placing the middle, ring, and little fingers (the "E") under the mandible and pulling the mandible upward, while the thumbs and index fingers create a "C" and then press down against the mask.
- Using the traditional hand placement, provide a head tilt–chin lift maneuver by pulling up on the mask and patient's face with your middle, ring, and little fingers while holding the mask onto the patient's face, to further open the airway. If your hands are large enough, place your little fingers behind the mandibular rami to do a jaw-thrust maneuver. This re-positioning helps to direct air into the trachea rather than into the esophagus and prevents gastric distention.
- Be sure to pull up only on the bony parts of the mandible, because pressure to the soft tissues of the neck or under the chin may obstruct the airway.
- Once a proper seal is achieved, have the second operator attach the bag to the mask and begin ventilation.

- *Bag ventilation and oxygenation:*

- For each breath, steadily and smoothly squeeze the bag to deliver a tidal volume of 6 to 7 mL/kg (or about 500 mL for an average size adult) over 1 second, and then release the bag to allow it to reinflate.
- Observe for proper chest rise during ventilations
- Monitor the patient, checking breath sounds and and pulse oximeter.

9. Patients should be secured to the transport trolley by means of appropriate restraint. Pressure areas (including neurovascular bundles) should be appropriately protected. Warming/insulating blankets should be used to keep the patient warm unless otherwise contraindicated. Indwelling lines and tubes should be secure and visible / accessible.
10. Patients must be appropriately dressed/covered to optimize their personal dignity.
11. Doctor must accompany the patient carrying blood pressure monitor , pulse oximeter and basic resuscitation drugs during the transfer process.
12. Continuous pulse oximetry monitoring of the patient must be done during the transportation
13. ALL the investigational reports, source notes or other relevant documents must be handed over to the doctor in charge at the Liver ICU.
14. The transfers must be communicated and co-ordinated with the duty nurse to ensure safe, timely and appropriate transfer and handover.

5. References

- Jesse B. Hall et al, Principles of Critical Care 4th ed. McGraw Hill / Medical, 2015 ISBN 13: 9780071738811
- Bucher JT, Vashisht R, Ladd M, et al. Bag Mask Ventilation. [Updated 2023 Jun 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan

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