



Applications and monitoring tests used in critical care units

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DESCRIPTION

Critical care is a new specialty in hospitals, and an increasing population living with multiple comorbidities which is increasing the burden on intensive care units. The common presentation which was usually seen at ICU and how to manage them effectively learn how to manage pneumonia, manage multiple organ failure due to trauma, identify and treat sepsis early, and prioritize care for trauma patients who require resuscitation. Critical care is medical source for people with life-threatening injuries and illnesses. It is usually done in an Intensive Care Unit (ICU) (Ball C et al., 2003). A team of specially trained healthcare providers will look after the patient around the clock. This includes the use of machines to constantly monitor vital signs. They also usually need to undergo special treatment some of them are (Bristow PJ et al., 2000).

- Access, analyze and monitor the patient data with complex multi-system problems to predict patient deterioration, set priorities and plan interventions.
- Plan and implement specialized nursing interventions to achieve optimal patient outcomes in potential or actual critical illness and end-of-life situations.

- Evaluate nursing interventions and adapt nursing plans to critically ill patients' responses. Apart of ICU patient monitoring relies on a direct observation and physical examination, which is done intermittently with a frequency that depends on the patient's illness. Other monitoring is continuous and it is provided by complex equipment that requires specialized training and experience to operate. Most of these devices generate an alarm when certain physiological parameters are exceeded. Each ICU must strictly follow a protocol for investigating alarms (Cuthbertson BH et al., 2007).

Monitoring typically includes measuring vital signs (temperature, blood pressure, pulse, and respiratory rate), quantifying total fluid intake and excretion, and often measuring daily body weight. Blood pressure can be recorded with an automatic sphygmomanometer or an arterial catheter can be used for continuous blood pressure monitoring. Transcutaneous sensors for pulseoximetry are also used (Hébert PC et al., 1999).

Blood test

Frequent blood draws can destroy veins, cause pain, and cause anemia, but patients in intensive care units usually have regular blood tests daily to catch problems early. Placing a venous or arterial catheter makes it easier to draw blood without the need for repeated peripheral needle sticks, but the risk of complications must be considered. In general, patients require a daily battery of electrolytes and a Complete Blood Count (CBC). The patient's magnesium, phosphate, and calcium levels should also be measured. Weekly liver enzyme and coagulation profiles are required for patients receiving total parenteral nutrition. Other tests (e.g., blood cultures for fever, complete blood count after a bleeding episode) are done as needed (Van den BG et al., 2001).

Cardiac monitoring

In most of the ICU patients, cardiac activity is monitored using a 3-channel system. Signals are usually sent to a central monitoring station from a small radio transmitter worn by the patient. An automated system will generate alarms for abnormal speed and cadence and store abnormal records for later review.

Esophageal Doppler Monitor (EDM)

This device is a soft 6mm catheter that is inserted through the nasopharynx into the esophagus and placed behind the heart. A Doppler flow probe at the tip allows continuous monitoring of cardiac output and her stroke volume. Esophageal Doppler Monitoring (EDM) does not cause pneumothorax, arrhythmia, or infection.

CONCLUSION

Critical care medicine has evolved over the years in terms of structure, processes and outcomes. Less invasive interventions than the more humane care, earlier diagnosis and

treatment, expanding services beyond the physical walls of the ICU, and better national and international collaboration with colleagues around the world. The first intensive care unit was developed about 60 years ago. Critical care is one of the fastest growing areas of healthcare in terms of patient numbers and is becoming increasingly important in developed countries' healthcare systems.

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