สำเนา

บันทึกข้อความ

ส่วนราชการ คณะพยาบาลศาสตร์ มหาวิทยาลัยราชภัฏนครปฐม โทร. 0 3410 9300 ต่อ 3565

ที่ พยบ. 497/2562 วันที่ 13 มีนาคม 2562

เรื่อง รายการผลการอบรม การสัมมนา และการประชุมฯ

เรียน คณบดีคณะพยาบาลศาสตร์

ตามคำสั่งมหาวิทยาลัยราชภัฏนครปฐมที่ พยบ. 39/2562 ได้ส่งให้ข้าพเจ้านางสาวสิริพรรณ เรืองเครือวงษ์ และนางสาวจุฑาทิพย์ เทพสุวรรณ์ ไปร่วมโครงการอบรมระยะสั้น เรื่องการเตรียมพยาบาลสำหรับการดูแลผู้ป่วยวิกฤต ณ. โรงแรมอโมรา ท่าแพ จังหวัดเชียงใหม่ เมื่อวันที่ 28 มกราคม – 1 กุมภาพันธ์2562 นั้น

ข้าพเจ้าขอรายงานผลการอบรม สัมมนาประชุม ดังต่อไปนี้

1.ชื่อเรื่อง (การอบรม สัมมนา ประชุมปฏิบัติการ)

การเตรียมพยาบาลสำหรับการดูแลผู้ป่วยวิกฤต

2.ผู้จัด ศูนย์บริการพยาบาล ร่วมกับคณะกรรมการบริหารหลักสูตรการพยาบาลเฉพาะทาง สาขาการพยาบาลผู้ป่วยวิกฤต (ผู้ใหญ่และผู้สูงอายุ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

3.สถานที่ ณ. โรงแรมอโมรา ท่าแพ จังหวัดเชียงใหม่

4.หน่วยงานที่เข้าร่วม (การอบรม สัมมนา ประชุมปฏิบัติการ)

พยาบาลวิชาชีพ อาจารย์พยาบาลจากสถานศึกษาต่างๆ

5.จุดมุ่งหมายของการจัดในครั้งนี้

เพื่อให้ผู้เข้าร่วมการอบรม

1. มีความรู้ความเข้าใจเกี่ยวกับแนวคิดการพยาบาลผู้ป่วยวิกฤต
2. มีความรู้ความเข้าใจเกี่ยวกับการประเมินผู้ป่วยวิกฤตและผู้ป่วยกลุ่มเสี่ยงอย่างต่อเนื่อง
3. มีความรู้ความเข้าใจเกี่ยวกับการเจ็บป่วยวิกฤตที่พบบ่อย และการจัดการทางการพยาบาล
4. มีความรู้ความเข้าใจเกี่ยวกับการใช้ยาและเทคโนโลยีในการรักษาผู้ป่วยวิกฤต
5. มีความรู้ความเข้าใจเกี่ยวกับการดูแลผู้ป่วยวิกฤตอย่างต่อเนื่อง

6.หัวข้อในการอบรม สัมมนา ประชุมฯ

1. Evolution and concept of critical care nursing
2. Early detection among risk groups
3. Basic mechanical ventilation

4. Assessment of tissue oxygenation in critically ill patients
5. Nursing problems in critically ill patients
6. Drugs used in critically ill patients
7. Nursing management in patients with sepsis and septic shock
8. Nursing management of critically traumatic patients
9. Nursing management in patients with acute coronary syndrome
10. Nursing management in patients with acute stroke
11. Fluid resuscitation and Fluid therapy in critically ills
12. Hemodynamic monitoring in ICU
13. Basic EKG and cardiac arrhythmias
14. Arterial blood gas analysis
15. Care of the critically ill's families
16. ICU Transition care: The role of ward nurses
17. Nursing management in patients with acute GI bleeding
18. Blood transfusion

7.สรุปเนื้อหาในแต่ละหัวข้อ

ดังไฟล์แนบ

8.ประโยชน์ที่ได้รับและแนวทางที่จะนำมาปรับปรุงงานใหม่ในหน่วยงาน

นำความรู้ใหม่ที่ได้มาใช้พัฒนาการเรียนการสอนทั้งภาคทฤษฎีและภาคปฏิบัติ โดยมีแนวทางการถ่ายทอดความรู้ แนวคิดทางการพยาบาลให้กับนักศึกษาที่ปฏิบัติการพยาบาลในหอผู้ป่วยวิกฤตได้ทันสมัยมากยิ่งขึ้น

จึงเรียนมาเพื่อโปรดทราบ

(อาจารย์สิริพรรณ เรืองเครือวงษ์)

อาจารย์

13 มี.ค. 62 เวลา 17:12:25 Non-PKI Server Sign

Signature Code : NwAyA-ElARg-AyAEQ-AOAA0

ความเห็น/ข้อสั่งการที่ 1

รับทราบ ดำเนินการขึ้นเว็บไซต์

(ผู้ช่วยศาสตราจารย์ ดร.หทัยชนก บัวเจริญ)

คณบดีคณะพยาบาลศาสตร์

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สรุปโครงการอบรมระยะสั้น

เรื่อง การเตรียมพยาบาลสำหรับการดูแลผู้ป่วยวิกฤต

วันที่ 28 มกราคม – 1 กุมภาพันธ์ 2562 ณ โรงแรมอโมรา ท่าแพ จังหวัดเชียงใหม่

วันที่ 28 มกราคม 2562

หัวข้อ Evolution and concept of critical care nursing

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

The evolution of Critical Care Medicine is traced in relationship to its predecessors, namely Intensive Care and Intensive Therapy. This commentary documents the initial physical care rendered by professional nurses in hospitals of the 19th century in locations close to the nursing stations. The development of incubators for newborns and life-support devices to support ventilation and renal function or to reverse fatal arrhythmias characterized Intensive Therapy of the early 20th century. In the most recent 50 years, Critical Care evolved for comprehensive, largely electronic monitoring and automated laboratory measurements to guide intensive therapy of multiorgan failures by critical care physicians and nurse specialists, pharmacists, and respiratory therapists using multiple life-support methodologies and devices.

หัวข้อ Early detection among risk groups

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

The Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach is applicable in all clinical emergencies for immediate assessment and treatment. The approach is widely accepted by experts in emergency medicine and likely improves outcomes by helping health care professionals focusing on the most life-threatening clinical problems. In an acute setting, high-quality ABCDE skills among all treating team members can save valuable time and improve team

performance. Dissemination of knowledge and skills related to the ABCDE approach are therefore needed

หัวข้อ Basic mechanical ventilation

บรรยายโดย ดร.มยุลี สำราญญาติ

Getting oxygen in

Oxygen uptake via the lungs is dependent on a number of factors. Some can be manipulated to a large extent by mechanical ventilation:

- PAO2, which in turn can be manipulated by altering:
    - inspired oxygen concentration (FIO2)
    - alveolar pressure
    - ventilation
- ventilation-perfusion matching - by re-opening collapsed alveoli, thereby reducing intra-pulmonary shunting
    - positive end-expiratory pressure (PEEP) helps re-open alveoli and splint open alveoli

Getting carbon dioxide out

- Carbon dioxide elimination via the lungs is largely dependent on alveolar ventilation.
- Alveolar ventilation = Respiratory rate x (tidal volume - dead space)

Main controls

To improve oxygenation:

- increase FIO2

- increase mean alveolar pressure
    - increase mean airway pressure
        - increase PEEP
        - increase I:E ratio
- re-open alveoli with PEEP

To improve CO2 elimination:

- increase respiratory rate
- increase tidal volume

Modes of ventilation

- a certain volume of gas in a set period of time
    - the pressure generated in the lung will then be dependent on the resistance and compliance of the respiratory system
    - known as volume control mode
- a certain level of pressure for a set period of time
    - the tidal volume delivered will then be dependent on the resistance and compliance of the respiratory system
    - pressure control and pressure regulated volume control modes
- in assist-control modes (volume control, pressure control, pressure regulated volume control) the ventilator guarantees that the patient will receive the set minimum number of breaths, although he/she is able to demand (trigger) more
- in pressure support modes the patient only receives breaths when he/she triggers the ventilator

หัวข้อ Airway management

บรรยายโดย ดร.มยุลี สำราญญาติ

Airway management includes a set of maneuvers and medical procedures performed to prevent and relieve airway obstruction. This ensures an open pathway for gas exchange between a patient's lungs and the atmosphere. This is accomplished by either clearing a previously obstructed airway; or by preventing airway obstruction in cases such as anaphylaxis, the obtunded patient, or medical sedation. Airway obstruction can be caused by the tongue, foreign objects, the tissues of the airway itself, and bodily fluids such as blood and gastric contents (aspiration).

Airway management is commonly divided into two categories: basic and advanced. Basic techniques are generally non-invasive and do not require specialized medical equipment or advanced training. These include head and neck maneuvers to optimize ventilation, abdominal thrusts, and back blows.

Advanced techniques require specialized medical training and equipment, and are further categorized anatomically into supraglottic devices (such as oropharyngeal and nasopharyngeal airways), infraglottic techniques (such as tracheal intubation), and surgical methods (such as cricothyrotomy, and tracheotomy). Airway management is a primary consideration in the fields of cardiopulmonary resuscitation, anaesthesia, emergency medicine, intensive care medicine, and first aid. The "A" in the ABC treatment mnemonic is for airway.

<u>วันที่ 29 มกราคม 2562</u>

หัวข้อ Assessment of tissue oxygenation in critically ill patients

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Optimizing tissue perfusion is a major step in resuscitating critically ill trauma patients. Different methods of assessing the adequacy of peripheral perfusion are employed in the intensive care unit setting as prognostic markers, as indicators of response to therapy and,

recently, as therapeutic end-points. The pulmonary artery catheter and gastric tonometry consist two major advances in studying macroscopic hemodynamics and the effect on tissue oxygenation of impaired perfusion in shock. A review of the relevant literature is presented, with emphasis on the results of clinical trials. Established guidelines are reported in an effort to evaluate the current status of tissue perfusion markers in clinical practice.

หัวข้อ Nursing problems in critically ill patients

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Providing nursing care for the critically ill patient can be a challenging endeavor. Each case the technician encounters is different and has its own nuances. To provide high quality care, the veterinary technician is challenged to draw from their knowledge and experiences, remain flexible and be creative. The veterinary technician must have a sufficient knowledge and skill base and the ability to think critically. The knowledge base must encompass basic concepts of anatomy and physiology as well as a basic understanding of common disease processes, diagnostic, and therapeutic procedures. Technicians should also be familiar with potential complications or risk factors associated with these diseases, and procedures.

Traditionally, technicians have been trained in a task-based fashion. It will be helpful to include a goal-oriented approach for caring for the critically ill patient. Nursing goals should be directed at identifying and working towards desired out comes, and identifying and minimizing patient risk. For example, the doctor has diagnosed severe dehydration. The goal is to correct fluid volume deficits. The patient will need to be placed on IV fluids. The patient is now at risk for the development of 1. Catheter related infection, 2. Other catheter related complications (phlebitis, thrombosis, infiltration, etc.) and 3. Fluid overload. The technician should be prepared to take action to minimize these risks, recognize them if they occur and take appropriate action to correct the problem. This discussion will address various nursing care procedures and include desired goals or outcomes along with potential risk factors.

หัวข้อ Drugs used in critically ill patients

บรรยายโดย ผศ.ดร.วราวรรณ อุดมความสุข

Drugs in the cardiovascular

- Inotropic drugs
- Antiarrhythmic drugs
- Vasodilators

Diuretic drugs

Drugs affecting hemostasis

Drugs in the endocrine system

- Insulin
- Adrenal cortex hormone

Drugs affecting gastrointestinal system

Bronchodilators

Analgesic drugs

Neuromuscular blocking agents

Antibiotic drugs

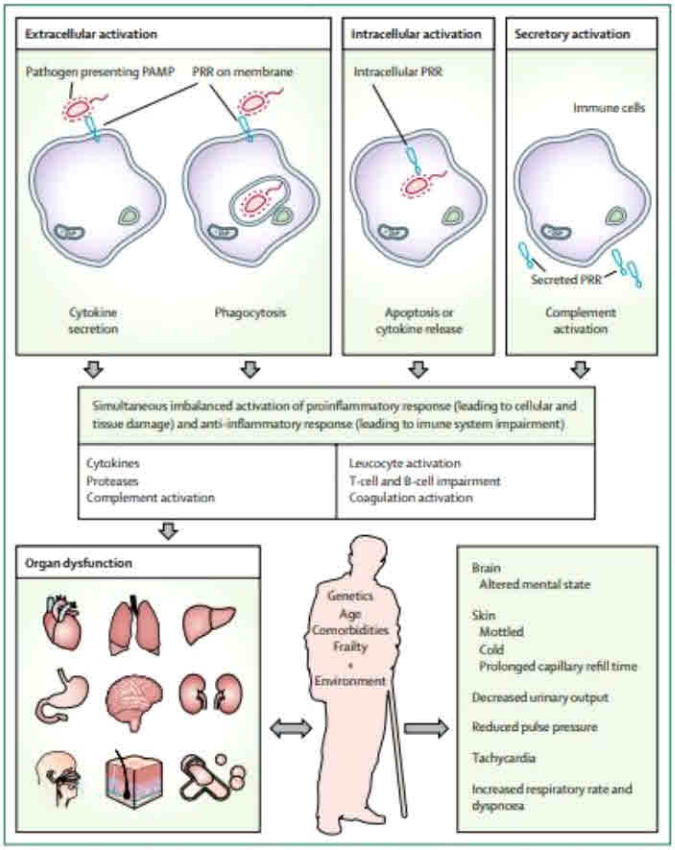
Drugs affecting electrolyte

<u>วันที่ 30 มกราคม 2562</u>

หัวข้อ Nursing management in patients with sepsis and septic shock

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Sepsis is a life-threatening, medical emergency affecting approximately one million persons annually in the United States (NIH, 2017). Patients hospitalized with sepsis are eight times more likely to die during hospitalization. As nurses, we are in a position to directly impact sepsis-related morbidity and mortality. Early identification and treatment are the cornerstone of sepsis management. We are on the frontline in the care of the hospitalized patient. Being cognizant of the subtle clinical changes indicative of impending clinical decline is critical for timely interventions and avoidance of poor clinical outcomes.



Terminology	SSC Definitions[9, 13]	Sepsis-3 Definitions[1]
SIRS	The presence of at least two of the following clinical criteria: • Temperature, < 36°C or > 38.3°C • Heart rate, > 90 bpm • Respiratory rate, > 20 bpm, or $PaCO_2$, < 32 mmHg • WBC count, < 4,000 mm^3 or > 12,000 mm^3	Not part of the definition
Sepsis	The presence of at least two SIRS criteria and known or suspected infection	• Sepsis is a life-threatening organ dysfunction caused by a dysregulated patient response to infection. • In lay terms, sepsis is a life-threatening condition that arises when the body's response to infection causes injury to itself and its organs.
Severe Sepsis	• Sepsis-induced hypotension • SBP, < 90 mmHg • MAP, < 70 mmHg, or an SBP reduction of 40 mmHg from baseline • Serum lactate, > 2 mmol/L • Signs of organ dysfunction (acute oliguria, for example)	Not part of the definition
Septic Shock	Sepsis-induced hypotension that persists despite adequate fluid resuscitation and requires vasopressors to support perfusion	Septic shock is seen in patients with sepsis who develop underlying circulatory and metabolic abnormalities resulting in hypotension that require vasopressors to maintain a MAP of ≥ 65 mmHg and having a serum lactate level of ≥ 2 mmol/L despite adequate volume resuscitation, resulting in a higher risk of mortality.

หัวข้อ Nursing management of critically traumatic patients

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

The basic principles of initial management of the critically ill trauma patients include rapid identification and management of life-threatening injuries with the goal of restoring tissue oxygenation and controlling hemorrhage as rapidly as possible. The initial assessment of the patient is often truncated for procedures to manage life-threatening injuries. Major, open surgical procedures have often been replaced by non-operative or less-invasive approaches, even for critically ill patients. Consequently, much of the early management has been shifted to the ICU, where the goal is to continue resuscitation to restore homeostasis while completing the initial assessment of the patient and watching closely for failure of non-operative management, complications of procedures, and missed injuries.

หัวข้อ Nursing management in patients with acute coronary syndrome

บรรยายโดย ดร.จิตตวดี เหรียญทอง

An acute coronary syndrome (ACS) is a constellation of symptoms and signs that result from obstruction of the coronary arteries. Common signs and symptoms include chest pain, dyspnea, and electrocardiographic abnormalities. The most common cause of acute coronary syndrome is blockage of the coronary artery from cholesterol rich plaque and thrombus.

In acute coronary syndrome, a previously quiescent plaque has ruptured, exposing the lipid core, inciting platelet activation and aggregation with subsequent thrombus formation. When the atherothrombotic material is totally occlusive with complete cessation of blood flow through the artery, the acute coronary syndrome is termed ST-Elevation myocardial infarction (STEMI).

If the occlusion is partially obstructive and there is no evidence of myocardial injury (e.g., elevated cardiac troponin), the ACS is termed unstable angina, but if cardiac injury is detected with a partial obstruction, then the term to describe the ACS is non-ST segment myocardial infarction (NSTEMI). ACS unrelated to plaque rupture can infrequently be seen from coronary vasospasm, embolization, or spontaneous coronary dissection.

หัวข้อ Nursing management in patients with acute stroke

บรรยายโดย ดร.จิตตวดี เหรียญทอง

1. These 2018 guidelines are an update to the 2013 guidelines, which were published prior to the six positive “early window” mechanical thrombectomy trials (MR CLEAN, ESCAPE, EXTEND-IA, REVASCAT, SWIFT PRIME, THRACE) that emerged in 2015 and 2016. In addition, in the last 3 months, two trials (DAWN and DEFUSE 3) showed a clear benefit of “extended window” mechanical thrombectomy for certain patients with large vessel occlusion who could be treated out to 16-24 hours.

2. The benefits of intravenous (IV) tissue plasminogen activator (tPA) are time-dependent, and treatment for eligible patients should be initiated as quickly as possible (even for patients who may also be candidates for mechanical thrombectomy).

3. IV tPA should be administered to all eligible acute stroke patients within 3 hours of last known normal and to a more selective group of eligible acute stroke patients (based on ECASS III exclusion criteria) within 4.5 hours of last known normal. Centers should attempt to achieve door-to-needle times of <60 minutes in ≥50% of stroke patients treated with IV tPA.

4. Prior to initiation of IV tPA in most patients, a noncontrast head computed tomography (CT) and glucose are the only required tests. An international normalized ratio, partial thromboplastin time, and platelet count do not need to have resulted prior to IV tPA initiation if there is no suspicion for underlying coagulopathy. Centers should attempt to obtain a noncontrast head CT within 20 minutes of arrival in ≥50% of stroke patients who may be candidates for IV tPA or mechanical thrombectomy.

5. For patients who may be candidates for mechanical thrombectomy, an urgent CT angiogram or magnetic resonance (MR) angiogram (to look for large vessel occlusion) is recommended, but this study should not delay treatment with IV tPA if indicated.

6. Patients ≥18 years should undergo mechanical thrombectomy with a stent retriever if they have minimal prestroke disability, have a causative occlusion of the internal carotid artery or proximal middle cerebral artery, have a National Institutes of Health stroke scale score of ≥6, have a reassuring noncontrast head CT (ASPECT score of ≥6), and if they can be treated within 6 hours of last known normal. No perfusion imaging (CT-P or MR-P) is required in these patients.

7. In selected acute stroke patients within 6-24 hours of last known normal who have evidence of a large vessel occlusion in the anterior circulation and would have been eligible for DAWN or DEFUSE 3, obtaining perfusion imaging (CT-P or MR-P) or an MRI with

diffusion-weighted imaging (DWI) sequence is recommended to help determine whether the patient is a candidate for mechanical thrombectomy.

8. In selected acute stroke patients within 6-16 hours of last known normal who have a large vessel occlusion in the anterior circulation and meet other DAWN or DEFUSE 3 eligibility criteria, mechanical thrombectomy is *recommended*. In selected acute stroke patients within 6-24 hours of last known normal who have large vessel occlusion in the anterior circulation and meet other DAWN eligibility criteria, mechanical thrombectomy with a stent retriever is *reasonable*.

9. As with IV tPA, treatment with mechanical thrombectomy should be initiated as quickly as possible.

10. Administration of aspirin is recommended in acute stroke patients within 24-48 hours after stroke onset. For patients treated with IV tPA, aspirin administration is generally delayed for 24 hours. Urgent anticoagulation (e.g., heparin drip) for most stroke patients is not indicated.

11. The use of stroke units that incorporate rehabilitation is recommended for all acute stroke patients.

12. It remains unknown whether it would be beneficial for emergency medical services to bypass a closer IV tPA-capable hospital for a thrombectomy-capable hospital. While such an approach may delay IV tPA administration for patients who are and who are not mechanical thrombectomy candidates, this approach would expedite thrombectomy for those who are mechanical thrombectomy candidates.

วันที่ 31 มกราคม 2562

หัวข้อ Fluid resuscitation and Fluid therapy in critically ills

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Intravenous fluid therapy is one of the most common interventions in acutely ill patients. Each day, over 20% of patients in intensive care units (ICUs) receive intravenous fluid resuscitation, and more than 30% receive fluid resuscitation during their first day in the ICU. Virtually all hospitalized patients receive intravenous fluid to maintain hydration and as diluents for drug administration. Until recently, the amount and type of fluids administered were based on a theory described over 100 years ago, much of which is inconsistent with current physiological data and emerging knowledge. Despite their widespread use, various fluids for intravenous administration have entered clinical practice without a robust evaluation of their safety and efficacy. High-quality, investigator-initiated studies have revealed that some of these fluids have unacceptable toxicity; as a result, several have been withdrawn from the market (while others, controversially, are still in use). The belief that dehydration and hypovolemia can cause or worsen kidney and other vital organ injury has resulted in liberal approaches to fluid therapy and the view that fluid overload and tissue edema are 'normal' during critical illness; this is quite possibly harming patients. Increasing evidence indicates that restrictive fluid strategies might improve outcomes.

หัวข้อ Hemodynamic monitoring in ICU

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Hemodynamic monitoring in the form of invasive arterial, central venous pressure and pulmonary capillary wedge pressure monitoring may be required in seriously ill Intensive care unit patients, in patients undergoing surgeries involving gross hemodynamic changes and in patients undergoing cardiac surgeries. These techniques are considered the gold standards of hemodynamic monitoring but are associated with their inherent risks. A number of non-invasive

techniques based on various physical principles are under investigation at present. The goal is to not only avoid the risk of invasive intervention, but also to match the gold standard set by them as far as possible. Techniques based on photoplethysmography, arterial tonometry and pulse transit time analysis have come up for continuous arterial pressure monitoring. Of these the first has been studied most extensively and validated, however it has been shown to be substandard in patients with gross hemodynamic instability. The other two still need further evaluation. While the non-invasive methods for arterial blood pressure monitoring are based on diverse technologies, those for measurement of central venous and pulmonary pressures are mostly based on imaging techniques such as echocardiography, Doppler ultrasound, computed tomography scan and chest X ray. Most of these techniques are based on measurement of the dimensions of the great veins. This makes them operator and observer dependent. However, studies done till now have revealed adequate inter-observer agreement.

หัวข้อ Basic EKG and cardiac arrhythmias

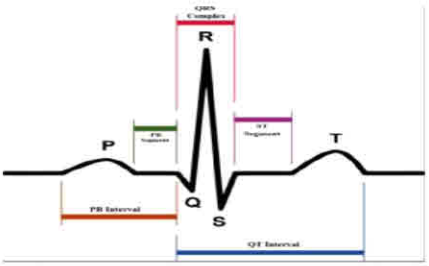
บรรยายโดย ดร. ณัฐธยาน์ สุวรรณคฤหาสน์

The Prototypical ECG Tracing

The P wave corresponds to electrical impulse traveling through the atria. This is synonymous with atrial depolarization and usually corresponds with atrial contraction.

The QRS complex corresponds to the depolarization of the left and right ventricles. It generally corresponds to the contraction of the ventricles.

The T wave corresponds to a repolarization of the ventricles.



Sinus Rhythm

A sinus rhythm is regular with normal P, Q-R-S, T deflections and intervals. Rate = 60-100 at rest.

Sinus Bradycardia

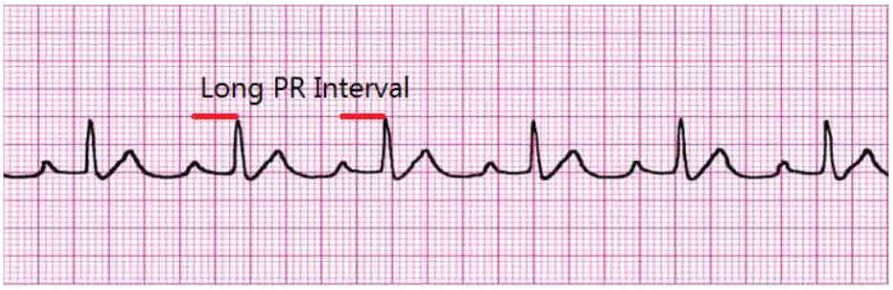
Sinus bradycardia is a sinus rhythm with a rate less than 60 per minute in an adult.

Sinus Tachycardia

Sinus tachycardia is a sinus rhythm with a rate greater than 100 per minute in an adult. Note that the p waves are still present.

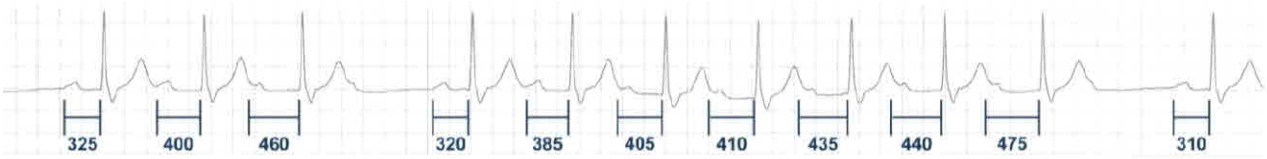
First-Degree Heart Block

Sinus rhythm with 1st degree heart block is a sinus rhythm with a prolonged PR interval > 0.20 seconds due to a delay in transmission from the atria to the ventricles.

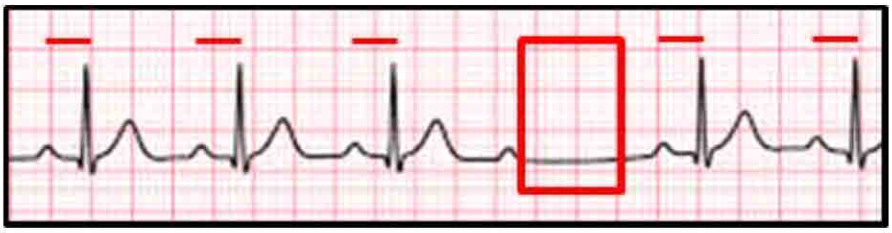


Second-Degree AV Heart Block

A 2nd degree AV block is usually classified as Mobitz Type I (Wenckebach) or Mobitz Type II. A Mobitz Type I heart block is characterized by progressive lengthening of the PR interval until a QRS complex is dropped.



A Mobitz Type II heart block is characterized by an intermittent dropped QRS that is not in a Mobitz Type I pattern. The Mobitz Type II block must be evaluated since it is one that can rapidly progress to a complete heart block.

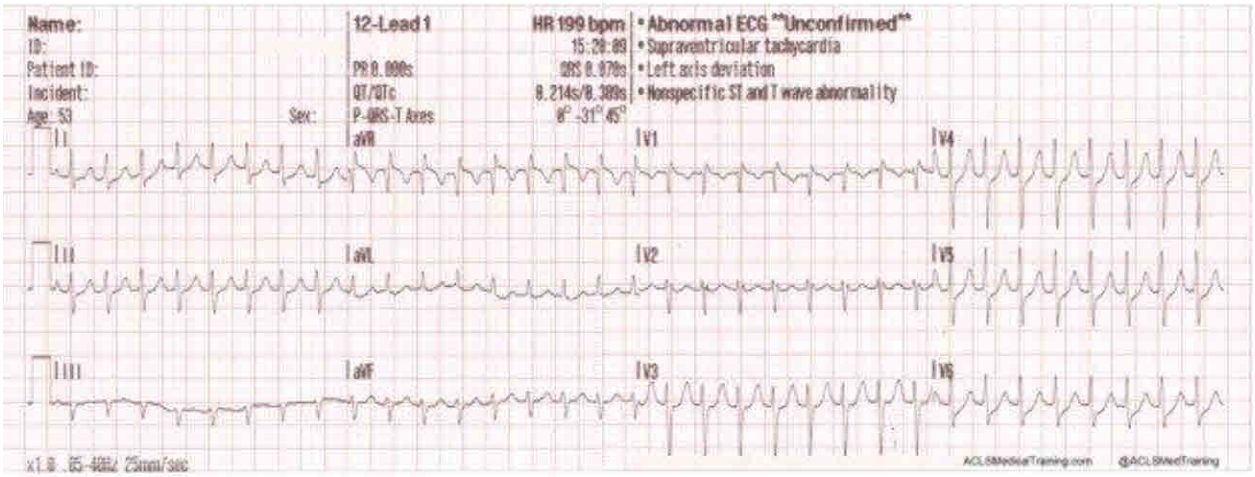


Third-Degree Heart Block

A 3rd degree heart block (sometimes called a complete heart block) is a rhythm in which there is no relationship between the P and QRS waves. In this case, the P to P intervals are regular but have no relationship to the QRS complexes on the ECG.

Supraventricular Tachycardia

Supraventricular tachycardia (SVT) is an extremely fast atrial rhythm with narrow QRS complexes when the impulse originates above the bundle branches (above the ventricles).



Atrial Fibrillation

Atrial Fibrillation (Afib or AF) is a very common arrhythmia. This rhythm is characterized by no waves before the QRS complex and a very irregular heart rate.

Atrial Flutter

Atrial flutter is a supraventricular arrhythmia that is characterized by a "saw-toothed" flutter appearance on the ECG that represents multiple P waves for each QRS complex.

Asystole

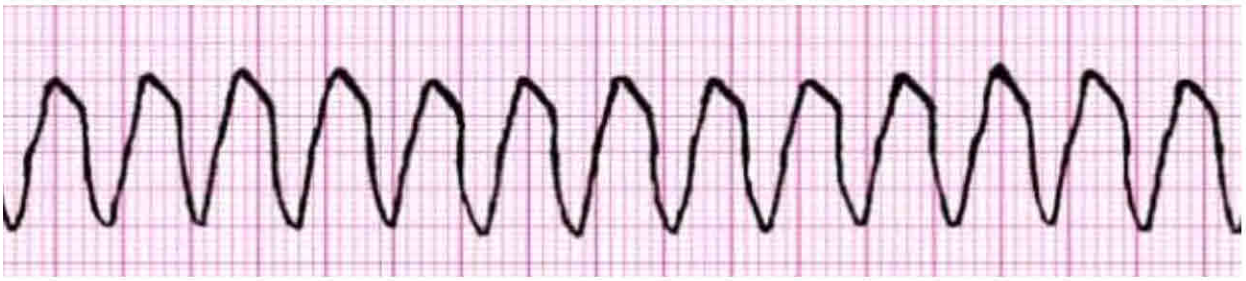
Asystole is also commonly known as a "flat line" where there is no electrical activity seen on the cardiac monitor. Not responsive to electrical defibrillation.

Pulseless Electrical Activity

Can be virtually any organized ECG rhythm in a patient who is unresponsive and lacks a palpable pulse. Thus, one cannot learn a PEA rhythm. It should not be confused, however, with specific pulseless scenarios listed previously.

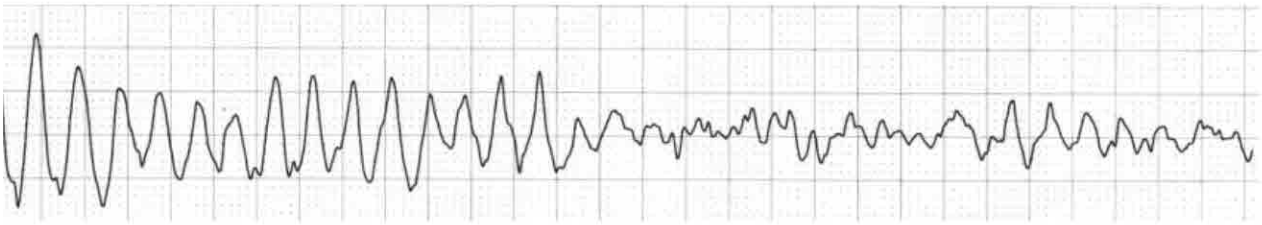
Ventricular Tachycardia

Ventricular tachycardia (Vtach or VT) is characterized by bizarre widened QRS complexes, no P waves and usually a rate over 100 per minute. May quickly degenerate to Ventricular fibrillation and death. VT may be responsive to electrical defibrillation.



Ventricular Fibrillation

Ventricular fibrillation (Vfib or VF) is characterized by a chaotic wave pattern and no pulse. VF may be responsive to electrical defibrillation.



หัวข้อ Arterial blood gas analysis

บรรยายโดย ผศ.ดร.จิราภรณ์ เตชะอุดมเดช

An arterial blood gas (ABG) test measures oxygen and carbon dioxide levels in your blood. It also measures your body's acid-base (pH) level, which is normally balanced when you are healthy. Interpreting an arterial blood gas (ABG) is a crucial skill for physicians, nurses, respiratory therapists, and other health care personnel. ABG interpretation is especially important in critically ill patients.

6-step approach:

Step 1: Assess the internal consistency of the values using the Henderseon-Hasselbach equation:

$$[H+] = \frac{24(PaCO_2)}{[HCO_3-]}$$

Step 2: Is there alkalemia or acidemia present?

pH < 7.35 acidemia

pH > 7.45 alkalemia

Step 3: Is the disturbance respiratory or metabolic? What is the relationship between the direction of change in the pH and the direction of change in the $PaCO_2$? In primary respiratory

disorders, the pH and PaCO2 change in *opposite*directions; in metabolic disorders the pH and $PaCO_2$ change in the same direction.

Step 4: Is there appropriate compensation for the primary disturbance? Usually, compensation does not return the pH to normal (7.35 – 7.45).

Step 5: Calculate the anion gap (if a metabolic acidosis exists): AG= [Na+]-([Cl-] + [HCO_3-])-12 ± 2

Step 6: If an increased anion gap is present, assess the relationship between the increase in the anion gap and the decrease in [HCO_3-].

Selected etiologies of respiratory acidosis

- Airway obstruction
  - Upper
  - Lower
- COPD
- asthma
- other obstructive lung disease
- CNS depression
- Sleep disordered breathing (OSA or OHS)
- Neuromuscular impairment
- Ventilatory restriction
- Increased CO2 production: shivering, rigors, seizures, malignant hyperthermia, hypermetabolism, increased intake of carbohydrates
- Incorrect mechanical ventilation settings

Selected etiologies of respiratory alkalosis

- CNS stimulation: fever, pain, fear, anxiety, CVA, cerebral edema, brain trauma, brain tumor, CNS infection
- Hypoxemia or hypoxia: lung disease, profound anemia, low FiO2
- Stimulation of chest receptors: pulmonary edema, pleural effusion, pneumonia, pneumothorax, pulmonary embolus
- Drugs, hormones: salicylates, catecholamines, medroxyprogesterone, progestins
- Pregnancy, liver disease, sepsis, hyperthyroidism
- Incorrect mechanical ventilation settings

Selected etiologies of metabolic acidosis

- Elevated anion gap:
    - Methanol intoxication
    - Uremia
    - Diabetic ketoacidosis, alcoholic ketoacidosis, starvation ketoacidosis
    - Paraldehyde toxicity
    - Isoniazid
    - Lactic acidosis
        - Type A: tissue ischemia
        - Type B: Altered cellular metabolism
    - Ethanol or ethylene glycol intoxication
    - Salicylate intoxication

- Normal anion gap: will have increase in [Cl-]
    - GI loss of HCO_3-
        - Diarrhea, ileostomy, proximal colostomy, ureteral diversion
    - Renal loss of HCO_3-
        - proximal RTA
        - carbonic anhydrase inhibitor (acetazolamide)
    - Renal tubular disease
        - ATN
        - Chronic renal disease
        - Distal RTA
        - Aldosterone inhibitors or absence
        - NaCl infusion, TPN, NH_4+ administration

Selected mixed and complex acid-base disturbances

- Respiratory acidosis with metabolic acidosis
    - Cardiac arrest
    - Intoxications
    - Multi-organ failure
- Respiratory alkalosis with metabolic alkalosis
    - Cirrhosis with diuretics
    - Pregnancy with vomiting
    - Over ventilation of COPD

- Respiratory acidosis with metabolic alkalosis
    - COPD with diuretics, vomiting, NG suction
    - Severe hypokalemia
- Respiratory alkalosis with metabolic acidosis
    - Sepsis
    - Salicylate toxicity
    - Renal failure with CHF or pneumonia
    - Advanced liver disease
- Metabolic acidosis with metabolic alkalosis
    - Uremia or ketoacidosis with vomiting, NG suction, diuretics, etc.

<u>วันที่ 1 กุมภาพันธ์ 2562</u>

หัวข้อ Care of the critically ill's families

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

Family's needs and considerations are an essential component of intensive care unit (ICU) care. Family satisfaction is related to clinician communication and decision making. Indeed, timely, honest communication is vital to the psychosocial health and satisfaction of the family. Conflict often arises within the family and between the family and the clinicians, over decision making. Again, good communication skills are critical to family satisfaction with decision making and comfort with the care received. Family members have numerous psychosocial changes, and may experience depression, anxiety, or anticipatory grief while their family member is dying in the ICU. Awareness of these conditions, providing support to the families, and allowing family access to

the dying individual can assist with meeting the family's desire to see their family member have a peaceful death.

หัวข้อ ICU Transition care: The role of ward nurses

บรรยายโดย รศ.ฉวีวรรณ ธงชัย

The transfer of patients from the intensive care unit (ICU) to a general ward can present several challenges for nurses. Such patients are at high risk of adverse outcomes, including readmission to the ICU, and increased nosocomial infections and mortality, with a resultant increase in hospital costs. This article explores the challenges of transferring patients from the ICU and uses evidence to examine ways to address them to ensure optimal care for a complex patient group. Transfer time, factors affecting general ward care, handover processes, recognition of deterioration and education, intensive care outreach, and the psychological factors affecting these patients are examined.

หัวข้อ Nursing management in patients with acute GI bleeding

บรรยายโดย ผศ.ดร.จิราภรณ์ เตชะอุดมเดช

The signs of acute GI bleeding include tachycardia, orthostatic changes in blood pressure/heart rate, blood or coffee-grounds-like material in nasogastric aspirate, hematochezia, perioral telangiectasia, and skin abnormalities. If a patient is suspected to have GI bleeding, clinicians should take steps to manage the condition.

1. Assess severity of GI bleeding and stabilize

2. Take a patient history

- Has the patient had previous GI bleeding? Up to 60% of patients with a history of an upper GI bleed are bleeding from the same lesion.

- Ask the patient about medications. Non-steroidal anti-inflammatory drugs and acetylsalicylic acid can predispose the patient to peptic ulcer disease; antiplatelets and anticoagulants can promote bleeding; and bismuth and iron can cause stool to appear black.
- Liver cirrhosis can indicate varices.
- Aortic stenosis and renal disease can indicate angioectasia.
- Tobacco abuse, alcohol abuse, and *Helicobacter pylori* can indicate a malignancy.
- Marginal anastomotic ulcers can indicate gastroenteric anastomosis.

3. Perform a physical exam

- Signs of hypovolemia include tachycardia, orthostatic hypotension, and supine hypotension.
- Examining stool color may provide a clue to the location of the bleeding.
- Abdominal pain may be a sign of perforation.

4. Perform a risk assessment

- Perform a complete blood count, comprehensive metabolic panel, and coagulation studies.
- Cardiac enzymes and electrocardiogram can determine if a patient as a high risk of cardiovascular disease.
- Use risk-stratification tools to facilitate triage, including the Rockall scoring system, the Glasgow-Blatchford Scale, and AIM 65.
- Predict the need for hospitalization and intervention.

5. Treat the source of the bleeding

- Determine the need for pre-endoscopy medications.

- Perform endoscopy based on risk.
- If a patient undergoes hemodynamic resuscitation, they may need to undergo endoscopy, computed tomography, angiography, or push enteroscopy.

หัวข้อ Blood transfusion

บรรยายโดย ผศ.ดร.จิราภรณ์ เตชะอุดมเดช

Patients admitted to critical care units often receive blood transfusions but there is increasing evidence of potential harm as well as benefit. Clinical audits show that transfusions of platelets and FFP are often given for indications outside consensus guidelines.

- Red cell transfusion
- Platelet transfusion
- Plasma component transfusion
    - Fresh frozen plasma
    - Cryoprecipitate

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