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× DO NOT DO

Recommendations

IN THE EMERGENCY DEPARTMENT
**DO NOT DO Recommendations IN THE EMERGENCY DEPARTMENT**

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Introduction

Primum non nocere (first do no harm) is a Latin expression attributed to Hippocrates. It is a maxim in the field of medicine and the health sciences that exhorts doctors NOT TO DO anything that could be harmful to their patients. Furthermore, as physicians we are also expected to be effective and efficient in our medical practice. Efficacy refers to the attainment of a medical goal (diagnosis and treatment) under specific conditions, while efficiency refers to our ability to do this at the lowest cost possible.

By critically appraising the actions we perform because “this is the way it has always been done” in spite of the absence of scientific evidence supporting them—and sometimes even despite evidence against the practice—we can question those habits in order to stop performing those actions and improve our profession.

In 2013, the Spanish Ministry of Health, Social Services and Equality launched a project called Commitment to Quality by Scientific Societies in Spain. In the first phase, twelve scientific societies representing medical specialties in Spain, including semFYC, presented recommendations on clinical practices that should be avoided
to reduce the number of unnecessary medical interventions. Since then, other societies have joined the project.

In the last two years, semFYC has published two collections of DO NOT DO recommendations specifically related to Family and Community Medicine, a specialty primarily, though not exclusively, focused on primary medical care. Both documents reflect evidence-based medicine and were drawn up using the GRADE approach, with the active participation of partners and members of the working groups.

While doing no harm is an essential ethical requirement in every healthcare setting, it is of particular importance in emergency care, a setting where decisions must often be made quickly in very complex situations with consequences that may be life-threatening or put the patient at risk of serious and permanent disability. Emergency medicine is also a vital component in the curriculum for physicians training to become Family Medicine specialists. Taking all of these considerations into account, semFYC has decided this year to prioritize a new set of DO NOT DO recommendations, on this occasion focused on emergency care.

The society is proposing fifteen new recommendations (five diagnostic and ten therapeutic) covering a wide range of emergency situations.

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DO NOT lower blood pressure too rapidly or excessively in a hypertensive urgency.

Hypertension is one of the most significant risk factors in Western society. It is a chronic disease and usually asymptomatic, but some patients may present acute complications requiring immediate medical attention.

A hypertensive urgency is a hypertensive crisis (systolic blood pressure [SBP] ≥ 180 mmHg and diastolic blood pressure [DBP] ≥ 120 mmHg) in which the elevation in blood pressure (BP) is not accompanied by alterations involving acute impairment of one or more organ systems.

The concept of hypertensive urgency should be differentiated from that of hypertensive emergency, a situation in which elevated BP is accompanied by end-organ damage, making immediate treatment necessary to prevent death or irreversible organ damage. It should also be distinguished from a false hypertensive crisis, a situation in which the elevated BP is a reaction to a stressful situation or anxiety but does not cause end-organ damage.

In our field, hypertensive urgencies represent 0.5% of all emergencies treated in a general hospital. Causes include malignant or accelerated hypertension, cardiovascular disease, the use of cocaine, amphetamines or other designer drugs, pheochromocytoma, monoamine oxidase inhibitor (MAOI) interactions with tyramine, sudden suppression of antihypertensives (beta-blockers), kidney transplantation, and extensive burns.

A hypertensive urgency requires less immediate treatment (24-48 hours) than a hypertensive emergency, and can be treated with oral medication and an initial out-of-hospital approach. The initial goal of treatment is to decrease mean BP by no more than 25% over a period of a few minutes to 1 hour. Later, if the patient is stable, SBP should be lowered to 160 mmHg and DBP to 100-110 mmHg over the next 2 to 6 hours. Excessive lowering of BP may precipitate...
renal, cerebral or coronary ischemia and should be avoided. The exceptions to this general rule are patients with intracranial pathology and patients in whom aortic dissection is suspected.

Bibliography

- Varon J, Elliott WJ. Management of severe asymptomatic hypertension (hypertensive urgencies) in adults. This topic last updated: Jan, 2016. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2016.

DO NOT administer oxygen to adult patients with suspected acute coronary syndrome if oxygen saturation is normal.

Acute coronary syndrome (ACS) usually occurs as a result of acute myocardial infarction with ST elevation (25%) or unstable angina (38%). ACS can be associated with coronary thrombosis and is an important cause of mortality.

The aim of supplemental oxygen ($O_2$) therapy is to improve the oxygenation of ischemic myocardial tissue and reduce ischemic symptoms (pain), infarct size, and consequent morbidity and mortality. While the pathophysiological reasoning is apparently valid, it is possible that supplemental $O_2$ may have both beneficial and harmful effects. Despite the recommendations of clinical practice guidelines, there are no conclusive studies to support the routine use of $O_2$ in patients with ACS.

Using the GRADE methodology, the American Heart Association in its 2015 recommendations concludes that the evidence for the fundamental outcome of mortality is of very low quality. Consequently,
the recommendation gives greater weight to avoiding the damage (adverse physiological reactions and cellular damage) that may be caused by supplemental $O_2$. Therefore, it recommends that supplemental $O_2$ should not be administered to adult patients with suspected ACS in any setting (pre-hospital, emergency or in-hospital) when oxygen saturation is normal.

Bibliography


DO NOT hyperoxygenate after recovery from a cardiorespiratory arrest: immediately after cardiopulmonary resuscitation, arterial oxygen saturation should be maintained in the range of 94%-98%.

Cardiopulmonary arrest (CPA) is defined as a clinical situation in which there is an unexpected, abrupt and potentially reversible cessation of spontaneous respiratory and/or cardiocirculatory function. CPA causes a sudden decrease in the transport of oxygen ($O_2$), which initially causes cerebral dysfunction and subsequently leads to irreversible cell damage by tissue anoxia and biological death.

Oxygen therapy involves the administration of supplemental $O_2$ at a concentration higher than that found in the atmosphere (21%). The aim of treatment is to increase $O_2$ levels in the blood and prevent tissue and brain damage caused by hypoxia.

The goal of cardiopulmonary resuscitation (CPR) maneuvers in the event of a CPA is to achieve an arterial oxygen saturation ($SaO_2$) of
100%. However, while it is important to avoid hypoxemia, there is increasing evidence that hyperoxia aggravates reperfusion injury to the brain and other organs. Once return of spontaneous circulation has been achieved following CPR, it has been demonstrated that the outcomes for brain recovery are better when the target saturation is reduced from 100% to 94%-98%.

Bibliography

DO NOT administer large volumes of intravenous fluids to patients in acute hypovolemic states until the cause of bleeding has been controlled. The fluids should be replenished in a limited way to maintain a systolic blood pressure above 80 to 90 mmHg.

In acute bleeding, the main goal of intravenous fluid replacement is to maintain or restore tissue perfusion. To increase efficacy and decrease the complications associated with fluid replacement, it is very important to carefully assess the choice of intravenous fluid, the timing of administration, and the doses required.

Healthy people whose compensation mechanisms are intact can tolerate bleeding or hypovolemia for longer periods and accept large volumes of infused fluids. The patient with a significant loss of blood can develop hypovolemia and, when mean arterial blood pressure drops, may go into hypovolemic shock.

In recent years, the classic hemorrhagic shock resuscitation scheme has been questioned as some studies have shown that aggressive
resuscitation can lead to increased blood loss and decreased survival. A Cochrane review concludes that randomized controlled trials are needed to establish the most effective strategy for fluid replacement in patients with hemorrhagic trauma.

A recent meta-analysis comparing the traditional fluid replacement scheme with resuscitation involving limited fluid replacement during active bleeding in patients with severe trauma supports the use of restrictive fluid resuscitation.

Thus, provided there is no traumatic brain injury, the recommended approach is restrictive fluid replacement aimed at maintaining blood pressure at a low level sufficient to guarantee blood supply to important organs until definitive control of hemorrhage is achieved (hypotensive resuscitation).

In trauma patients with hemorrhage and hypotension, but who do not have traumatic brain injury, a target systolic blood pressure (SBP) of between 80 and 90 mmHg is recommended until the source of bleeding has been controlled. In patients with traumatic brain injury, hypotension is associated with increased mortality and a worse functional prognosis. Therefore, in patients with severe traumatic brain injury, it is advisable to maintain an SBP of at least 110 mmHg or a mean arterial blood pressure of at least 80 mmHg.

**Bibliography**

DO NOT prescribe antibiotic therapy in all exacerbations of chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) affects large numbers of people worldwide. COPD exacerbations can accelerate the deterioration of pulmonary function and lead to a faster decline in quality of life and increased mortality.

The use of antibiotics in COPD exacerbations remains controversial. Prescription of antibiotics is based on the assumption that the cause of the infection is bacterial (estimated to be the case in about 56% of exacerbations) and that the antibacterial treatment will prevent the complications associated with infection. However, not all patients benefit from the routine use of antibiotics.

Several meta-analyses and a Cochrane systematic review show that antibiotic therapy effectively reduces treatment failure and mortality rates in patients with chronic bronchitis who are admitted to intensive care units with severe exacerbations. However, in the case of ambulatory patients and those admitted to hospital outside of intensive care units, the usefulness of antibiotic treatment is still under discussion. An approach based on treating each case according to the severity of the COPD could prevent the overuse of antibiotics, thereby decreasing adverse effects and reducing costs. However, there are uncertainties because these meta-analyses and reviews include studies of very heterogeneous populations based on a wide variety of criteria for patient inclusion and outcome assessment.

Most clinical practice guidelines, including the Global Initiative for Chronic Obstructive Lung Disease (GOLD) (2016 update) and GesEPOC (2014 update), do not recommend routine prescription of antibiotics to patients with COPD exacerbations. Antibiotics are recommended in patients with COPD exacerbations who have three cardinal symptoms: increased dyspnea, increased sputum volume, and increased sputum purulence (Anthonisen’s criteria for bacterial exacerbation).
DO NOT routinely administer corticosteroids in the treatment of acute spinal cord injury.

Traffic accidents, violence, and sports are common causes of traumatic acute spinal cord injury (SCI) in children and young adults. In elderly patients, falls are the most common cause of acute SCI.

Some studies have suggested that corticosteroids, specifically methylprednisolone, can minimize inflammatory secondary damage after acute SCI and thus facilitate neurological recovery. The use of high doses of methylprednisolone in the first 8 hours after acute SCI became a standard treatment on the basis of the results of the Second National Acute Spinal Cord Injury Study (NASCIS II) clinical trial in 1990. However, the clinical utility of this treatment is now being widely debated.

Serious questions have been raised concerning the favorable conclusions about the advantages of early administration of high-dose corticosteroids in patients with acute SCI in a Cochrane systematic review written by the lead author of the NASCIS trial. NASCIS clinical trials II and III present important methodological limitations including the controversial use of a post hoc analysis.

In current guidelines, methylprednisolone is cited as a treatment option for acute SCI rather than a standard treatment; the benefit is unclear and there is very little evidence indicating improvement...
in neurological outcomes. At the same time, methylprednisolone treatment in this setting has been associated with serious side effects, including pneumonia, sepsis, infections, gastrointestinal hemorrhage, hyperglycemia and even death.

Treatment with high doses of methylprednisolone must be considered in some acute SCI cases if the potential benefit of the treatment outweighs the risk of associated complications. However, the clinical utility of high-dose intravenous methylprednisolone in the first 8 hours after an acute spinal cord injury has not been demonstrated by compelling evidence.

Bibliography

DO NOT perform gastric lavage routinely on patients who have ingested toxic substances unless the indication criteria are met.

Patients who ingest toxic products are frequently referred to the emergency department. Most cases involve intentional ingestion by a patient attempting suicide through massive intake of medicines. However, accidental overdosing is also observed.

Gastric lavage is a decontamination technique aimed at extracting toxic substances from the stomach (removing the toxin from the digestive tract and stopping further toxic absorption). It involves the sequential administration and removal by suction of small
volumes of fluid (water, saline or other special solutions) via a nasogastric tube. Gastric lavage is sometimes complemented by other digestive decontamination techniques, such as the administration of activated charcoal.

Traditionally, the use of activated charcoal has been widespread, although only a few studies have evaluated its efficacy and some of them appear to have methodological limitations. Gastric lavage, on the other hand, is associated with a high risk for complications that can worsen the clinical course and the prognosis.

An expert statement on the use of gastric lavage, published by American and European clinical toxicologists in 1997, and updated in 2013 concludes that gastric lavage should not be performed routinely for the treatment of poisoned patients. They recommend that gastric lavage should only be considered when the patient has ingested a potentially life-threatening amount of poison (lethal ingestion) and only when it can be performed within 60 minutes from the time of ingestion and the status of the patient’s vital functions is appropriate. These recommendations are supported by case-series studies.

Gastric lavage is contraindicated in the following situations: incomplete resuscitation; patients in good general health with appropriate antidote support; patients at risk of aspiration or other complications during lavage; a depressed level of consciousness; patients at risk for bleeding or perforation or who have recently undergone surgery; patients who refuse to collaborate; and patients who have ingested corrosive substances or hydrocarbons.

Bibliography

DO NOT perform a urine test strip on patients with a urinary catheter.

Asymptomatic bacteriuria appears in approximately 10% of patients with a bladder catheter; of these, 10%-25% develop local symptoms of urinary tract infection (UTI) and 3% develop sepsis.

The most important risk factor for UTI is the duration of catheterization. All patients (100%) who have an indwelling catheter in place for more than 30 days present bacteriuria, whereas bacte remia rarely develops in patients who have a catheter in place for a short period. In patients who require catheterization for 14 days or more, the most important preventive measure is the use of an aseptic technique when changing the catheter.

UTI is mainly diagnosed on the basis of signs and symptoms, such as fever, pain and bladder tenesmus. When these are present, antibiotic treatment may be required. The presence of bacteria or leukocytes in the urine rarely has implications for the treatment of UTIs. The urine test strip is not an effective method for detecting UTIs in adults with a permanent catheter because there is no relationship between the level of pyuria (presence of leukocytes in the urine) and the presence of an infection; the catheter invariably induces pyuria even when there is no infection. To ensure accurate diagnosis of UTIs prior to initiating empirical treatment (broad-spectrum antibiotics based on local sensitivity patterns), urine cultures should be obtained whenever possible.

Bibliography

DO NOT perform a plain abdominal radiograph in patients presenting with abdominal pain unless intestinal obstruction or perforation is suspected.

Acute abdominal pain is a frequent cause of emergency department (ED) visits. It may indicate the presence of numerous conditions, ranging from mild complaints to life-threatening disorders. The differential diagnosis includes appendicitis, intestinal obstruction, diverticulitis, cholecystitis, renal colic, acute intestinal pathology, pancreatitis and gynecological disorders. In a high percentage of cases, no definitive diagnosis is reached and nonspecific abdominal pain is reported.

The results of a detailed medical history and a thorough physical examination are essential guides to diagnosis. Laboratory and imaging tests help to rule out or confirm possible diagnoses. When a serious condition is suspected, it is better to opt for higher-resolution imaging techniques (ultrasound, computed tomography scan) than a plain abdominal radiograph.

Traditionally, plain abdominal radiography has been widely used in all patients with acute abdominal symptoms in the ED setting. However, the added value of its routine use is very limited since it provides little relevant information and rarely affects clinical outcomes. On the other hand, not performing radiography minimizes exposure to unnecessary radiation, reduces costs, and increases the efficiency of EDs.

A plain abdominal radiograph is indicated when intestinal obstruction, perforation or the ingestion of radiopaque foreign bodies is suspected. Some authors accept the use of plain abdominal radiography in renal colic (lithiasis), although not routinely.
DO NOT perform chest radiography routinely in cases of uncomplicated acute asthma exacerbations.

Asthma is a respiratory disease characterized by chronic airway inflammation. It typically manifests as intermittent dyspnea, cough and wheezing, although these symptoms are nonspecific and vary over time. Asthma is highly prevalent in Spain. Worsening of the symptoms (asthma exacerbation) is the reason for a great number of emergency department visits.

Chest radiographs are not routinely required for these patients in the emergency department. The most common radiographic abnormalities are pulmonary hyperinflation and thickening of bronchial walls. In an acute asthma exacerbation, a chest radiograph is almost never clinically meaningful. Studies suggest that findings on history and physical examination are sufficient to determine whether chest radiography is warranted.

A chest radiograph is recommended when a severe asthma exacerbation does not respond to conventional treatment, when no previous chest radiograph is available, when the presence of a foreign body is suspected, and in patients presumed to have a complication (atelectasis, pneumonia, pneumothorax).
DO NOT routinely perform a plain radiograph on ankle injuries (Ottawa rules).

Ankle injuries are a common complaint among patients seen in the emergency department (ED). Ankle sprains (stretching, partial rupture, or complete rupture of at least one ligament) account for a large percentage of these injuries. An estimated 15% of patients presenting to the ED with ankle injuries have a bone fracture.

The Ottawa ankle and foot rules are a set of guidelines that should be followed by clinicians performing a physical examination on patients presenting with ankle and foot injuries in order to better assess the severity of the injury, its management and, above all, the need for diagnostic measures such as plain radiographs.

These rules limit the harm from potential exposure to radiation and reduce costs and waiting times. At the same time they ensure that fractures are diagnosed and ensure quality care. These simple and easy-to-use rules have been validated in several studies. Physical examination of the ankle should be performed as soon as possible since some hours after the incident edema and antalgic contracture may limit the value of physical examination.
According to the Ottawa rules, a plain radiograph should only be ordered if:

- **Ankle** if there is any pain in the malleolar zone and any one of the following: bone tenderness along the distal 6 cm of the posterior edge of the tibia/fibula or the tip of the medial/lateral malleolus, OR an inability to bear weight for four steps both immediately after injury and in the ED.

- **Foot**: bone tenderness at the navicular bone or at the base of the fifth metatarsal, OR an inability to bear weight for four steps both immediately after injury and in the ED.

### Bibliography


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**DO NOT** perform cranial computed tomography (CT) in adult patients not on anticoagulants who have mild traumatic brain injury (Glasgow Coma Score 15) secondary to syncope when the neurological assessment is normal.

**Traumatic brain injury (TBI)** secondary to syncope (loss of consciousness for a short period) is a frequent reason for emergency department visits.

The risk of intracranial injury is considered to be low in patients with TBI secondary to syncope who present with Glasgow Coma Scale (based on eye, verbal and motor response) values between 14 and 15, a normal neurological examination, a mild headache or pain in the area of impact, dizziness and/or vertigo, and lace-
ration and bruising of the scalp. Cranial CT has shown no benefits in these patients. However, this criteria does not apply to patients taking oral anticoagulants.

There are two validated scales used to identify patients with mild TBI and low risk of serious intracranial lesions who could benefit from a cranial CT: The Canadian scale, validated by Stiell and colleagues, and the New Orleans Criteria, validated by Haydel and colleagues.

The risk factors that would indicate the recommendation of cranial CT according to the Canadian rules are:

- Glasgow Coma Scale < 15, at 2 hours after injury.
- Suspected open or depressed skull fracture.
- Signs of basal skull fracture.
- Vomiting ≥ 2 episodes.
- Age ≥ 65 years.
- Retrograde amnesia ≥ 30 minutes.
- High-energy mechanism.

**Bibliography**

DO NOT use intramuscular injection to administer medications on a routine basis.

The use of the intramuscular route to administer drugs is a widespread practice in the management of patients in emergency departments. Drugs administered by intramuscular injection are absorbed very quickly, especially those in aqueous solution. However, with a few exceptions, there is no evidence to show that the intramuscular route is better than oral administration.

A non-systematic review article published in the journal of the American Academy of Family Physicians focuses on the indications for intramuscular injection and the ambulatory use of antibiotics, corticosteroids, anti-inflammatory medications and vitamin B.

The review concludes that the oral route has proved to be as effective as the intramuscular, and is considered the first choice in the following cases:

- Antibiotics in the treatment of pneumonia and most other bacterial infections.
- Corticosteroids.
- High daily doses of vitamin B.
- Non-steroidal anti-inflammatory drugs (NSAIDS).

In general, the intramuscular route is indicated in patients with nausea, vomiting, diarrhea or dehydration. It is also indicated when there is a need to confirm the delivery of medication, when the oral route is impossible, and when the patient is uncooperative. The intramuscular route is also recommended in the following situations: the administration of antibiotics to treat infections with *Neisseria gonorrhoeae* and *Treponema pallidum*; in patients with group A beta-hemolytic streptococcal pharyngitis when the oral route cannot be used; and the administration of epinephrine in acute anaphylaxis.

**Bibliography**

**DO NOT routinely place a nasogastric tube in patients with suspected non-varicose upper gastrointestinal bleeding.**

Upper gastrointestinal bleeding (UGIB) occurs in the upper gastrointestinal tract (esophagus, stomach or duodenum). It usually manifests as hematemesis or melena, although it may occasionally present as rectal bleeding. Bleeding caused by esophageal varices accounts for 10%-20% of cases of UGIB and is almost always associated with chronic liver disease. The other 80%-90% are grouped under the name of non-variceal UGIB (NVUGIB).

NVUGIB is a frequent emergency affecting the digestive tract. The most common cause is a gastric or duodenal peptic ulcer. These hemorrhages can occur at any age, but are now more common in the elderly, especially when there is a history of use of NSAIDs or anticoagulants.

There is no evidence showing that the placement of a nasogastric tube improves the diagnosis, prognosis or treatment of NVUGIB. The guidelines recommend using nasogastric intubation when there is diagnostic doubt after history taking and physical examination (for example, to identify blood cells in the upper digestive tract when UGIB is suspected in a patient with rectal bleeding). The nasogastric tube has also proven useful for monitoring recurrence and for emptying the stomach prior to endoscopy. If used, it must be removed after gastric aspiration has been assessed.

The cause of bleeding can in most cases be identified using endoscopy. In about 80% of cases, the bleeding resolves spontaneously and does not recur. In the rest, treatment is necessary. The efficacy of endoscopic and pharmacological treatment of NVUGIB is over 90% and it can be repeated if necessary. When all other measures fail, surgical treatment is necessary.
DO NOT use Hyoscine butylbromide (Buscopan®) in the treatment of renal colic.

Scopolamine butylbromide or hyoscine butylbromide (Buscopan®) is an anticholinergic drug used in the treatment of gastrointestinal, genitourinary and biliary tract spasms. For decades it has been widely used to treat the pain of nephritic colic, based on empirical recommendations.

The results of studies on the effect of butylbromide in the urinary tract, either alone or in combination, are controversial.

Non-steroidal anti-inflammatory drugs (NSAIDs) provide more effective pain relief than butylbromide and should always be administered in the absence of contraindications. They act directly on the pathophysiological mechanisms of pain (inhibiting the effects of prostaglandins), decreasing ureteral smooth muscle tone and local edema. NSAID therapy has been shown to reduce new colic and also the number of emergency department visits.

The addition of butyl bromide to therapy with NSAIDs offers no additional benefit in pain management and is associated with significant side effects (dry mouth, constipation, loss of visual accommodation) that discourage its use.
Bibliography

- Gispert Uriach B. ¿Es efectiva la hioscina para el tratamiento del cólico nefrítico? AMF. 2010;6(8):460-1.