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ABSTRACT BOOK

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CHURG-STRAUSS SYNDROME-CASE REPORT

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INTRODUCTION: Churg-Strauss syndrome (CSS) is a potentially lethal systemic necrotizing vasculitis accompanied by eosinophilia in the peripheral blood with the appearance of intra and extravascular granulomas and eosinophilic infiltrates in the perivascular tissue. The disorder is typically associated with allergic syndromes such as bronchial asthma, sinusitis and rhinitis. The most common manifestations are pulmonary, neurological and cutaneous, and gastrointestinal and cardiac problems can also occur. The presence of peripheral eosinophilia and asthma in patients with vasculitis is a 90% sensitive and 99% specific indicator, but pathohistological verification of the diagnosis is also required. The diagnosis of CSS is based on at least 4 of 6 clinical criteria (American College of Rheumatology): 1. bronchial asthma, 2. eosinophilia> 1500 / mm3 peripheral blood or more than 10% in leukocyte formula, 3. mono or polyneuropathy, 4. transient infiltrates in the lungs, 5. paranasal sinusitis 6. extravascular eosinophilia in biopsy. Corticosteroids are initially used in the treatment of CSS which are in most cases sufficient therapy. The second line of therapy is the use of cytotoxic drugs. The most common cause of mortality is myocardial infarction caused by coronary arteritis
CAseA 27-year-old patient has been treated for bronchial asthma for twelve years. Currently, he cites fever, abdominal pain, itching and swelling of the face, weight loss and cough. Blood results indicate elevated values of inflammation (CRP, SE) with repeatedly confirmed leukocytosis in values from 26,000 to 67,000 with eosinophilia 49% -91%. Skin changes are also manifested. Skin biopsy showed perivascular eosinophil infiltrates. The MSCT examination of the chest showed zones of reduced transparency of the lung parenchyma and massive fibrous changes in the lower lobes of both lungs. Remission of the disease was achieved three weeks after the start of corticosteroid treatment.
DISCUSSION: All results in CSS are nonspecific and differentially diagnostic may indicate hyper eosinophilic syndrome, chronic eosinophilic pneumonia and other vasculitis. The Triassic of eosinophilia, asthma and vasculitis is highly specific for CSS. The course and prognosis of the disease depend on five factors associated with a high mortality rate: proteinuria greater than 1 g per day, serum creatinine higher than 140 mmol / l, cardiomyopathy and symptoms and signs GIT and CNS interventions. The factor from a bad prognosis is the time from the appearance of bronchial asthma to the manifestation of CSS shorter than three years. The five-year survival of patients with one risk factor is 71%. The most common causes of death are cardiovascular, renal and gastrointestinal insufficiency, opportunistic infections (Pneumocystis carinii) and complications of immunosuppressive therapy that can be avoided by choosing less toxic drugs and regular monitoring of patients. Early detection of the disease and rapid start of immunosuppressive therapy have an impact on better treatment results
Key words: vasculitis, eosinophilia, bronchial asthma, eosinophilic infiltrates

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IS EVERYTHING COVID?

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INTRODUCTION Most health systems are organized in such a way that doctors who deal with emergency medicine are always on the front line, in direct contact with the patient. Emergency centers must have an efficient and reliable way of working in all situations, even in the pandemic in which the

world is currently having.Despite the great unknown to the world health community regarding the SARS Cov2 virus, a conclusion was quickly reached about the only effective way to fight: strict isolation of suspected and infected patients, protective measures and mass testing. As Covid 19 is a systemic viral infection with a dominant respiratory tract infection, patients with major problems with this system are considered highly suspicious of Covid.At the Admission and Triage Clinic (ATC) of the Emergency Center of the University Clinical Center of Serbia, with the beginning of the Covid 19 pandemic, all patients highly suspected of Covid 19 infection were examined and cared for. The indication to be taken care of in this clinic was the patient's fever, difficulty breathing, cough, contact with Covid positive people, etc. Of course, even in ideal conditions, and least of all in the situation we are in now, there is no gold standard in triage. The main disadvantage of this classification of patients was the dominant reliance on the clinical picture and symptoms, which in Covid 19 infections are very diverse and nonspecific. In addition to burdening the health system with Covid positive patients, the lack of capacity to take care of chronic patients (due to the transition of institutions to the Covid system) this is one of the basic challenges in the pandemic. Patients with symptoms highly suspicious of Covid are very often misinterpreted and underdiagnosed.

This paper presents a case of a non-Covid dyspnoeic patient.

CASE: A 70-year-old dyspnoeic and febrile man was examined at the ATC of the Emergency Center in Belgrade. The patient became ill a few days before that, getting a high fever, coughing, suffocation and severe pain in the back muscles. Healthy from before. In the physical finding, the patient is conscious, oriented, hemodynamically stable, easily dyspnoeic, febrile. Auscultatory heartbeat was rhythmic, F about 130 / min, tones clear, no noise. TA 160/90 mmHg. Breathing is weakened by diffuse, bilateral basal late-inspiration cracks. Since the X-ray of the lungs did not verify the pathological substrate, which can explain the condition of the dyspnoeic patient, he was referred for emergency CT pulmoangiography, on which the finding was also clear.

RESULTS: During further observation, the patient becomes more and more agitated and complains of severe back pain. Heteroanamnestically, it is learned that the disease started with a severe back and neck pain. For these reasons, an orthopedist and a neurologist were consulted. A CT scan of the endocranium was performed, which was normal. CT of the cervical, thoracic and lumbar spine that showed degenerative changes. Abdominal echo was without pathological substrate, as well as urine sediment. Analgesic and antipyretic therapy was prescribed, which did not improve the general condition of the patient. In the lab findings that arrived, inflammation parameters were markedly elevated: Le 25.1 CRP 422.3 Procalcitonin 2.63. For these reasons, a CT of the abdomen was performed, which showed that the right psoas as a whole is more voluminous, with a pair of gas inclusions in the muscle, while gas inclusions and fluid infiltrates, primarily of inflammatory etiology, are also observed retrocrurally in front of IV space L1 and L2. The patient was admitted to the Department of Surgery under the diagnosis of sepsis and retroperitoneal abscess. He was treated conservatively, with triple antibiotic therapy. An MRI of the cervical and lumbosacral parts of the spine was also performed, which indicated the finding of spondylocystitis on several levels with epidural empyema, as well as inflammatory-infectious changes in the epidural collection in the LS part of the spine.

DISCUSSION: In the era of the Covid pandemic, it is very difficult when we have a dyspnea patient to think of something else. Of course, the goal is to isolate such a patient immediately, until the results of the PCR test arrive, in order to prevent the spread of the infection. But the question is whether all isolated Covid patients are positive, and whether we endanger those who are not, by putting them in the same isolation clinics or wards. It is a problem that is widespread in all Emergency Admissions of various health care institutions. The Covid pandemic reminded us how important it is to strengthen the national public health infrastructure. As well as the important place of Emergency Medicine in the system. All this indicates that clear protocols (legally framed) of urgent care and triage in all situations, especially pandemics and mass accidents, are very necessary.

Key words: Covid 19, Dyspnaea, Sepsis, Emergency medicine, Triage

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HAND BONE FRACTURES

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INTRODUCTION: Hand fractures are the most common fractures of the upper extremity (about 10%). They are rarely isolated, they are usually associated with injuries to other hand structures, which further complicates treatment and worsens functional outcomes. 70% of these fractures occur in the working population, which has significant socio-economic consequences
METHODS: A total of 208 patients with fractured hand bones were treated in our institution in one year. Based on the medical documentation, a retrospective analysis was performed. The aim of the study is to present the modalities of surgical treatment and to indicate the epidemiological significance of hand injuries.
RESULTS: Of the 208 patients, 196 were men (94.23%). There were 70 isolated fractures of the hand (33.65%), and fractures of other injuries 138 (66.35%), as follows: concussion 38 (18.27%), incomplete amputations 2 (0.96%), amputation 22 (10.58%), mixed injuries 46 (22.12%), replantation 10 (4.81%) and revascularization 20 (9.62%). Plaster immobilization was initially applied to all patients at the emergency department. Different methods of surgical treatment were used: Kirchner needles (84%), plates and screws (8%), free screws (3%) or combined methods (5%).
DISCUSSION: Hand fractures are very common and extremely important, especially when their consequences are taken into account, such as significant functional deficits, long absences from work and high treatment costs. We encourage further research into risk factors, so that we can influence them and thus prevent the occurrence of hand fractures.
Key words: Trauma, fracture, hand, fixation

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ST ELEVATION IN AVR LEAD

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Introduction: The 12-lead ECG is a widely available bedside test, especially in the emergency department as well in the prehospital settings for urgent triage. Although each lead provides specific information, the aVR lead has been frequently overlooked in the past. Guidelines suggest that the aVR sign may represent an ST-elevation myocardial infarction (STEMI) equivalent and therefore, an indication for emergent cardiac catheterization and reperfusion. The recognition of aVR lead elevation is becoming more accepted as a mandatory diagnostic tool, in particular for physicians working at emergency medical service.
Data source and selection of materials: Retrospective analysis of literature with settings: a VR lead, STEMi, Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the library.
Results of synthesis: ST elevation in the aVR lead is often misinterpreted and typically. A review of the literature uncovers that aVR lead changes are widely ignored, but now we know that it is important to use the aVR lead as an essential part of the ECG interpretation. Moreover, several levels of evidence substantiate that STE in the aVR lead is highly associated with the left main, the left anterior descending coronary artery (LAD), and 3-vessel coronary artery disease. ST elevation in aVR lead greater than that in lead V1 may be useful for predicting acute LMCA obstruction, which is a rare angiographic finding and requires immediate treatment. If the ST elevation in aVR is higher than that in V1, the sensitivity of showing LMCA lesion was accepted as 81% and the specificity as 80%. In another study, ST segment elevation in aVR and V1 and ST segment depression in V5-6 were reported

due to LMCA lesions. An isolated STE in the aVR lead reflects a STEMI due to occlusion of the LMCA. acute coronary artery disease with ST elevation in aVR and V1 syndromes are rarely observed clinically. It should be kept in mind that such ECG samples may be related to LMCA lesion, and it should be remembered that more rapid intervention should be done.

Conclusion: The recognition of aVR lead elevation is becoming more accepted as a mandatory diagnostic tool, in particular for physicians working at emergency medical services at emergency departments

Key words: aVR lead, STEMI, left main

TRIAGE OF PATIENTS DURING THE COVID 19 PANDEMIC IN KCCG

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Novel coronavirus pneumonia (COVID-19) is an acute respiratory infectious disease, which has the characteristic of human-to-human transmission and is extremely contagious. Correctly standardizing the process of early screening of infection or suspected cases in the fever clinic has become a key part of the fight against the pandemic.

Triage during the Covid-19 pandemic can impose difficult allocation decisions.Triage criteria should be objective, ethical, transparent, applied equitably and publically disclosed. The aim of this review is to describe the triage tools and pros for critical care resources in a pandemic health emergency. Following COVID-19 infection patients present with a varying range of symptoms and differing levels of severity. Most patients will have a mild to moderate presentation and will not require hospitalisation. However, those patients who deteriorate (become increasingly hypoxic or breathless) or have severe disease will require hospitalisation for oxygen therapy and possibly ventilatory support. A key symptom that suggests increasing severity is breathlessness.

Triage means not only ranking in terms of importance but also allocation of limited medical resources. Survival, post epidemic-quality of life, and consumption of medical resources required to achieve the set goal are crucial for making triage decisions. The pandemic triage decisions should be based on a protocol, considering the need for medical measures and therapy benefits. Challenges in triage in COVID 19 include: (1) the role of age and chronic comorbidities; (2) evaluating children and pregnant patients; (3) racial, ethnic, and socioeconomic disparities in health; (4) prioritization of healthcare workers; and (5) balancing clinical judgment versus protocolized assessments.

In order to be prepared for this challenging situation, we have to make good triage and useful protocols which would help as to save as many life as possible. In KCCG we created triage protocol for treatment of COVID 19 patients which helps as in our everyday work.

REPERFUSION THERAPY IN THE TREATMENT OF ACUTE ISCHEMIC STROKE - TIME IS BRAIN!

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Timely recanalization of the occluded artery is the only effective therapy for acute ischemic stroke. The successful introduction of intravenous thrombolysis in the treatment of acute ischemic stroke more than 20 years ago abolished the centuries-old treatment nihilism that accompanied this severe disease. Today, intravenous thrmbolysis is considered a standard in ischemic stroke therapy. However, thrombolysis is far from ideal due to the short 4.5-hour therapeutic window and significantly limited recanalization potential in large and medium cerebral blood vessel occlusion. A

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significantly higher recanalization effect with fewer side effects was achieved with the development of new endovascular techniques. The great success was achieved with techniques using vacuum aspiration of thrombus, but with the advent of self-expanding stent retrievers, a real revolution was made in the treatment of the most severe forms of stroke. In the span of only one year, the results of five large randomized clinical studies were published, which unequivocally showed a better effect of mechanical thrombectomy compared to intravenous thrombolysis in patients with occlusion of large blood vessels of the anterior cerebral circulation. A meta-analysis that included all five studies showed a statistically significantly better recovery in the intervention group of subjects after 90 days (mRS 0-2 in 46% of subjects in the intervention group vs 26.5% in the control group), while the number of patients who need to be treated with an intervention procedure to reduce disability by one point mRS was only 2.6. Thanks to these results, mechanical thrombectomy was soon found in all relevant guidelines as a recommended method of treatment for patients presenting in the first 7 hours after the onset of acute ischemic stroke with occlusion of the terminal part of the carotid artery or proximal segment of a medial cerebral artery. Subsequent studies have confirmed that mechanical thrombectomy can be used in selected patients for up to 24 hours after stroke onset if modern neuroimaging methods confirm the existence of a perfusion deficit. The implementation of this intervention is accompanied by a number of unknown situations and requires a significant reorganization of pre-hospital emergency services and admission hospital services, both neurological and neuroradiological.

ORGANIZATION OF THE EMERGENCY DEPARTMENT IN THE PRIMARY RESPIRATORY AND INTENSIVE CARE CENTER OF THE UNIVERSITY HOSPITAL DUBRAVA, CROATIA

Maša Sorić
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By the decision of the Croatian Civil Protection Headquarters and the Ministry of Health, the University Hospital Dubrava was designated as the exclusive tertiary care center for COVID-19 patients. The University Hospital Dubrava (UH Dubrava) was chosen because of the high level of staff expertise, availability of all the necessary equipment, exceptional traffic connections including a helidrome and the superlative existing level of communication with colleagues from the Clinic for Infectious Diseases. Only patients with a positive PCR or rapid antigen test for the SARS-CoV-2 virus were admitted. From November 2020 to May 2021 a total of 8463 Sars-CoV-2 positive patients were examined, of which 5259 patients were admitted for in-patient treatment (62%). This imposed a demanding challenge for the medical staff in many ways, most importantly, from an organizational standpoint. Multidisciplinary cooperation between hospitals, EMS, the Department of Health, the Department of Defence, the PoliceDepartment and many other services. During the "hybrid model" of the Emergency department (ED) from May 2020 to November 2020, the pre-triage and isolation of suspected COVID-19 patients significantly prolonged the length of stay in the ED, but not for the non-COVID patients. In that time frame, we noted a significant decrease in the number of patients seen in the medical emergency room. With the introduction of the COVID-19 vaccines, we noted a decrease in the number of new cases and admissions. The introduction of rapid antigen tests made the biggest impact on the dynamics of the ED flow and prevention of exit block. The staff of the institution has risen to the challenge of combating the COVID-19 disease pandemic, which required a significant adjustment of clinical and professional work from all of us in a very short period of time. The staff of the UH Dubrava rose to the challenge, in the face of adversity, adapting, adjusting, communicating and relentlessly rapidly organizing and reorganizing clinically and professionally, in order to combat the demands of the COVID-19 pandemic.

VERTIGO - AN EMERGENCY OR MAYBE NOT?

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Seasickness, fear of heights, and adverse effects of alcohol were the major areas where descriptions of vertigo and dizziness were found in Roman, Greek, and Chinese texts from about 730 BC–600 AD. However, the growth of knowledge of the vestibular system and its functions began primarily in the nineteenth century, especially by Moritz Romberg who gave general descriptions of signs and symptoms of various conditions having the key symptom of vertigo, but no definition of vestibular disorders. The primary role of the balance system is to allow us to interact and maintain contact with our surroundings in a safe and efficient manner and information is gathered through our visual, somatosensory and vestibular senses and sent to our brainstem for integration, then finally on to our cortex for perception and processing. When a sensory conflict occurs, the brainstem must efficiently and quickly (reflexively) adjust the level of priority given to the conflicting information, or a sensation of imbalance may occur, such as dizziness which is one of the most common complaints among patients presenting to emergency departments, primary care physicians, neurologists, otolaryngologists or internal medicine doctors, especially in patients 75 years of age or older. It represents a common term used to describe multiple sensations (vertigo, presyncope, disequilibrium), each having numerous etiologies.
In this presentation we will emphasize primary care approach in diagnostic algorithm to the vertigo, which is defined as an illusion of movement. This indicates an imbalance within the vestibular system, however, the symptoms per se does not usually indicate where in the system the imbalance originates - a sensation can be the result of a lesions in the inner ear, the visual-vestibular interaction centers in the brain stem and cerebellum or is the result of subjective sensation pathways of the thalamus or cortex.

SANJA IN WONDERLAND

Sanja Vasić
EMERGENCY CENTER BELGRADE

As the first official emergency medicine specialist of the Emergency Center trained by an emergency medicine specialist, I received an invitation and an honor to present my experience of work, schooling and training at the Emergency Center (EC). An emergency center is institution where patients come when they don't really know where to go for treatment. This impression is valid not only for ordinary people who come to EC on their own, but also for patients who are referred by institutions from all over Serbia when they have exhausted their diagnostic and therapeutic possibilities. In the period before the pandemic, emergency medicine specialists worked primarily in the Internal Medicine Clinic, but they were also present in the intensive care unit, surgical and neurological clinics. In that way, the vast majority of emergencies that an emergency medicine specialist deals with were included. Coming to EC, I saw every day conditions that until then, I knew theoretically, only. The relaxation with which emergency medicine specialists solved everyday challenges and dealt with different situations, and the knowledge they are ready to share at any time and the positive energies of team members inspired and motivated me to work harder to become part of that team. During the preparations for taking the specialist exam, I just became aware of the amount of new knowledge and experience I gained in working with colleagues at UC. Then it became completely clear to me that only in large medical centers such as UC can I see and experience all the situations and challenges that are crucial for the work and development of an emergency medicine specialist. Actions in the diagnosis and treatment of emergencies, how to solve them the fastest and most efficiently, even when it comes to very rare conditions, are what add value to the work in the UC. Because of that, I think that I had an advantage during taking the specialist exam compared to other colleagues who did not have the

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opportunity to work with other emergency medicine specialists during their schooling in an institution such as the Emergency Center. The approach to emergencies is different when you are trained by an emergency medicine specialist than when it is done by a surgeon or cardiologist or neurologist. After the proclamation of the COVID-19 pandemic in our country, UC emergency medicine specialists empowered with two trainees (one of whom was me) took great responsibility and started working in the newly opened Admission Triage Clinic (PTA) or unofficially "isolation". The PTA was opened with the aim of preventing the spread of SARS-COV-2 virus in UC departments. Emergency medicine specialists performed triage and assessed the patient's suspicion of COVID-19. From that moment until today, triage is performed on the basis of the answers from the completed epidemiological questionnaire, body temperature measurements, short anamnesis and quick assessment of respiratory status. Reception triage ambulance works as follows. There are 7 beds with standard monitoring, ultrasound machine, portable X-ray machine, and if there is a need for CT diagnostics, one CT machine is set aside exclusively for PTA patients. The PTA takes care of all febrile patients who report to the UC, then dyspnoea patients of unclear COVID-19 status, COVID-19 suspected patients with additional urgency, then COVID-19 positive patients who are referred from the Infectious Diseases Clinic for consultation with other specialists or come independently in UC because in Belgrade for a long time there was no institution where COVID-19 positive patients with other acute diseases can be examined. Since March 15, 2020, when the clinic was formed, 16,879 patients have been examined. In the first wave during March, April and May 2020, that number was 1088. After the calming of the third wave, in June, since the vaccination started a lot, and the Delta strain of SARS-COV-2 virus has not yet appeared in Serbia, the number of patients in PTA decreased. This period is important because emergency medicine specialists used it to improve their practice. Bearing in mind that the beginning of the work of the new Emergency Center with the new triage system is expected soon, the PTA doctors started the implementation of the new triage system in June this year. The essence of the triage system is the assessment of the degree of urgency of the condition due to which patients report to the Emergency Center. The system works on the basis of determining the degree of urgency of the patient's condition and marking with different colors. Vitally endangered patients who require urgent examination and diagnosis are marked in red, and patients in severe general condition are marked in orange, who will be examined within 10 minutes. Patients who are not life-threatening are marked in yellow and green, and a time period of 60 and 240 minutes, respectively, is allowed until the examination. Depending on the current situation and the condition of the patient, retrieval can be done in each specialist clinic. Admission triage service of emergency medicine is the youngest service in UC, we are still laying our foundations, mechanisms of functioning and strengthening, but with daily engagement, energy and lion's work, prove it!

PREHOSPITAL PAIN MANAGEMENT IN CHILDREN

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Introduction: Pain is one of the most commonly seen symptoms in children managed by emergency medicine practitioners. Recognition and treatment of pain in children, differs from the adults. Successful analgesia is achieved in only one third of children in prehospital settings. Treatment of pain must be initiated promptly.

Synthesis: The best method for pain assessment is to get anamnestic data from children or their care givers and/or by following the vital signs. The use of pain scales adopted for child's age could be of additional help. History data may point toward etiology, anatomic localization, intensity and chronicity of pain. Isolated monitoring of tachycardia, hypertension, tachypnea and other vital signs

could be misleading, since these signs could be easily seen in upset and crying children. Initial assessment according to pain scale adopted for child's age, may provide better identification and quantification of pain. Repeated use of the same scale after analgesics may improve assessment of therapeutic effects. Pain management may be through pharmacological and nonpharmacological means. Nonpharmacological technique consists of immobilization and elevation of injured extremity in case of injuries, putting the patient in most comfortable position and the use of attention distraction methods. Pharmacological approach is based on administration of various analgesics depending on intensity of the pain. In this manner, acetaminophen and non-steroid anti-inflammatory drugs (NSAID) are suggested for mild to moderate pain. In the common practice, ibuprofen, naproxen and ketorolac are the most common used NSAIDs. Their dominant application is using the oral or rectal route. For treatment of medium to higher pain intensity, opiates such as: morphine, fentanyl are recommended. In case of inadequate response to opiates, ketamine is considered to be an adequate option. If the pain persists, drug may be repeated with a half of the initial dose. In case of higher pain intensity analgesics should be administered intravenously, intranasally or intraosseous. Intranasal route of analgesics application is recently considered feasible in children without intravenous access or in the absence of tolerability. Intranasal administration is well tolerated, noninvasive route, providing rapid drug resorption within 30 minutes.

Conclusion: Treatment of pain is crucial part of early management of pediatric patients, since, the inadequate pain control may cause physiological and psychological complications with both short- and long-term consequences.

Key words: pain management, pain assessment, analgesics, children, emergency medical services

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PHYSICAL INJURIES IN CHILDREN WITH SUSPECTED ABUSE OR NEGLECT

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It is estimated that every fourth child in the world is victim of abuse or neglect. Any recent act or failure to act of parents or caregivers, which results in death, serious physical injury or emotional harm, sexual abuse or exploitation is considered abuse. If child experience poor hygiene, exposure to the harm elements, lack of compliance with medical therapy, Inadequate supervision or forms of malnutrition related to parental control over feeding neglect may be suspected.

Discovering and reporting abuse and neglect is important in prevention of further abuse with potentially more severe even fatal injuries and long-term consequences. It is not only legal obligation of all medical workers but also professional and moral duty.In abused child any injury may occur, but some injuries are typical for abuse and should attracts attention for further investigation of potential abuse or neglect. Those injuries are bruises, fractures and burns. Children that are independent walkers usually have several bruises as the result of their activities. Bruises in children that do not crawl (less than 9 months old), more than 4 bruises in crawling and 10 in walking children are suspected to abuse. Incidental bruises are located over bony prominences on the anterior body surface (shin, forehead, nose and chin) while inflicted bruises are typically located on tights, buttocks abdomen and chest wall, arms, cheeks over mouth and ears. Patterned and clustered bruises are typical for child abuse as well. Any fracture in non-ambulatory child is suspicious for abuse. Rib fractures, especially in children younger than 3 years, posterior rib fractures, fractures of the firs rib and multiple fractures in different stages of healing are vary likely inflicted injuries. Metaphyseal corner fractures are almost universally result of abuse. Torus fractures, supracondylar humerus fractures and femoral fractures in children less than 3 years old strongly suspicious to be intentionally inflicted. Up to 20% of burns in children, especially younger than 3 years, are result of abuse. Abuse

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should be suspected if there is delay in seeking medical help of more than 2 hours, or clear evidence of other injuries typical for abuse or signs of neglect are present. Accidental burns are typically over anterior and lateral body surfaces (spill areas) with irregular borders and nonuniform depth and rarely involves full thickness of the skin while inflicted burns as the result of abuse usually have regular borders and clear demarcation line to non-injured skin, involves full thickness and are of uniform depth. Burns with stockings or glows distribution, burns having zebra stripes od donut sparing sign as well as contact burns on dorsum of hand and cigarette burns are almost always result of child abuse.There are no injures of parenchymatous organs typical for abuse. Many injuries that could be prevented with adequate supervision and care are not only accidental injuries but are result of neglect as well.

STRUCTURED (CERTAIN) APPROACH DURING GOLDEN HOURS OF CRITICAL ILLNESS

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MAYO CLINIC, ROCHESTER, MINNESOTA, USA

US Academy of Medical Science identified diagnostic error, therapeutic harm, and dying without dignity key priorities. These problems are particularly prevalent in critical care medicine where information overload, resource constraints, and time pressure pose additional challenges. High quality supportive care is the most important modifiable outcome determinant in critical illness. Prioritizing relevant information, human factors engineering, and standardization are necessary to facilitate timely, error-free, patient-centered supportive care. CERTAIN (Checklist for Early Recognition and Treatment of Acute Illness and iNjury) program focuses on standardized approach to the critically ill with the goal to maximize the quality of life and, when appropriate, quality of dying using a compassionate, humane approach to patient care. The design and content were informed by survey of clinicians from diverse international settings. The implementation of CERTAIN in 35 hospitals across five continents was associated with improved adherence to evidence-based processes of care, decreased length of stay, and reduced mortality. Novel technologies including virtual simulation workshops and virtual coaching enable highly scalable knowledge translation to the bedside of critically ill patients worldwide.

GROWING EMERGENCY MEDICAL SYSTEMS

Jim Ducharme
MCMASTER UNIVERSITY, QUEEN'S UNIVERSITY, ONTARIO, CANADA

As any nation that wrestles with the development of emergency medical services learns, it must first accept the paradigm shift that is required. Coordination of all levels of care becomes critical, as one recognizes that failure of any one link in the chain creates failure along the entire length. If one looks backward at each step:

1. Inadequate home care or facilities for the elderly and impaired forces acute care hospitals to prolong lengths of stay
2. Inadequate outpatient primary care or specialty availability results in decreased health and later discovery of illness which places a greater burden on the hospital system
3. Aging of the population creates a greater burden of disease on the overall population which often leads to longer hospital stays
4. Failure to create a true health care system where good health and prevention are the priorities ensures the arrival of the tsunami of chronic non-infectious illnesses
5. Longer lengths of stay create exit block for the emergency department – admitted patients have nowhere to go, leading to crowding in the ED and hallway medicine

6. Crowded emergency departments will result in long offload delays, or worse, ambulances with sick patients and nowhere to go

The old silo approach where each service cared for its own patients, blissfully unaware of other services' needs no longer works.
In this lecture we will attempt to identify how one can grow a system – minimizing the pain of transition while still taking the necessary steps. Rather then provide a generic formula (that will always fail) the presenter will instead ask the key questions that each system must answer if they are to succeed. The best way to an optimal outcome is knowing which questions to ask and identifying the right people to find the solutions. Thinking one 'knows' before starting ensures failure.

PAIN MANAGEMENT IN THE ED

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The number one symptom of patients seen in the emergency department is pain; 20% have as a primary complaint symptom related to a chronic pain condition. Despite an average of 15-25% of patients having severe pain, it is rarely if ever discussed as part of the management of the patient. Education about pain as a core objective in training is routinely omitted from a curriculum. Physiology, pharmacokinetics and adverse effects of pain medications are almost never taught despite 20% of the population with chronic pain, 10% of hospital admissions due to AEs and the rising risk of addiction from opioids Trauma resuscitation ignores pain in its ABCDE of ATLS. Less than 10% of intubated patients received a regular ongoing analgesic – the sicker you are the more likely your pain will be ignored. Of patients admitted to a medical ward with a non-painful condition 33% will suffer from severe pain during their hospital stay.
Managing pain is about a mindset, about humane care and making pain management a priority. That mindset can only take place with pain 'champions' and core curriculum content because "if we do not teach it, it must not be important". Poor pain management is what is learned from the invisible curriculum – how we see our mentors manage pain.
This talk will attempt to establish principles of pain acre as well as review the primary analgesics to be used in a system-based approach to excellent pain management

CRITICAL CARE APPROACH TO KIDS

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Pediatric patients present with early signs of shock, distress, and markers impending cardiovascular arrest - however most providers ignore those signs up until the very last moment when kids crash. This talk will focus on early recognition of kids in shock, as well as a focus on the pediatric assessment triangle and early identifiers of impending shock which will help you on the next shift.
Objectives:
- review abnormal signs of perfusion in kids
- review briefly abnormal ECGs in kids
- discuss oxygen therapy in kids
- discuss physiological and anatomical difference in pediatric airway and ventilation
- approach to management of abnormal tachycardia and arrhythmias

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FEVER IN YOUNGER CHILDREN – GENERAL APPROACH

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Most pediatric patients with fever present well without any risk factors for severe sepsis. However there are some key differences in recognition of febrile children compared to adults which we should take into consideration.
This talk will focus on assessment of risk and febrile children. Discussion of common etiologies for fever in kids.
Objectives:
- risk based assessment of fever in young pediatric patients
- discussion of need for further testing in the diagnosis of UTI
- review indications for stool testing in children
- discussion of high risk presentations for sepsis in kids

CHALLENGES OF TIA

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Introduction: Suspected TIA is a common diagnostic challenge for physicians especially in the emergency room because of the very high early risk of ischemic stroke, requiring urgent investigation and preventive treatment.
Goal: The aim of this presentation is to better understand the significance of clinical, imaging and therapeutical approach of TIA in the emergency room.
Data Synthesis: Patients with a diagnosis of TIA have an increased risk of future ischemic stroke: 15% to 30% of ischaemic strokes are preceded by TIA symptoms, often on the same day. The main diagnostic challenge of TIA is that the symptoms and signs have usually resolved by the time of assessment: the gold standard remains assessment as soon as possible by a clinical expert. There is no evidence for a statistical difference between duration of symptoms in patients with TIA and mimics. Up to 60% of patients referred to a TIA clinic do not have a final diagnosis of TIA. The immediate identification of the cause of such a TIA and initiation of treatment can prevent as much as 80% of subsequent strokes. The urgent etiological work-up by routine blood tests, neuroimaging evaluation of the brain, of the cervical and of intracranial vessels, the electrocardiography, the prolonged cardiac monitoring and echocardiography is reasonable. The ABCD2 score (which includes Age, Blood pressure, Clinical features, Duration and Diabetes) may predict subsequent stroke but this score does not include other known predictors of high stroke risk, including carotid disease, recurrent TIAs and evidence of tissue damage on MRI. It is reasonable to hospitalize in Stroke Unit patients with TIA if they present within 72 hours and have an ABCD2 score >or=3 or the evaluation cannot be rapidly completed on an outpatient bas. The secondary preventive medications with clopidogrel and aspirin for 21 days reduced the risk of recurrent stroke with no significant increase in bleeding risk. The randomized controlled trials are under way to identify the risk or benefit of initiation or resumption of OAC treatment, including NOAC therapy, early after TIA in patient with atrial fibrillation. Additional factors to consider are the size of the infarct on brain imaging and risk factors for bleeding such as advanced age, uncontrolled hypertension, severe small vessel disease, and need for triple antithrombotic therapy in patients with a recent acute coronary syndrome or coronary stent.
Conclusion: Suspected TIA remains a common and important diagnostic challenge for physicians including neurologists and a careful consideration of clinical features can be very helpful in establishing the diagnosis. The transience of symptoms makes historical features paramount in establishing the diagnosis among the many "mimics". The aspiration is to see all patients with

suspected TIA within 24 hours with the benefit of urgent etiological work-up and the best possible treatment adapted to risks factors to prevent a stroke.

SAVE ME - WHAT DO THEY EXPECT OF US

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Introduction: Systematic measurement of the quality of physicians' work dates back to the late 19th century when E.Codman and H.Cushing began collecting data on various surgical interventions to determine which ones had better results. Correct strategy should be directed towards introduction of new skills, modern information technologies, changes in regular work and acquired routines, guided by "up to date evidence based" information and with the clear support of the most experienced doctors and leading structures of health institution.
Data source and selection of materials: Retrospective analysis of available professional literature using the terms: quality improvement, emergency department.
Result of synthesis: The broadest definition of health quality is "health care that a health worker would like to receive if he falls ill." Goals and factors for improving the quality of work are well defined in the publication "Crossing the quality Chasm" and are divided into six main areas: safety, effectiveness, patient orientation, time factor, efficiency and equality. Measures of work quality can be analized through following aspects: structure, work process and outcome. The structure consists of everything that exists in emergency department before the patient's arrival and includes the layout of the premises, equipment, staff, protocols and procedures. Structural characteristics are rarely a priority in work quality improvement initiatives. Work process refers to all those measures that are performed during the care for the patient and represents the aspect on which it is possible to achieve the greatest improvement of importance. Outcome is an aspect that is measurable after patient leaves emergency center and concerns mortality, morbidity and quality of life. When looking at emergency centers, nature of the patients is heterogeneous in etiology and the recommendations for care vary in relation to the diagnosis. Time intervals are relatively easy to measure since the timing of interventions of acute conditions is generally well documented. Quality and detailed medical documentation is essential for accurate measurements and analyzes. Medicine is an extremely dynamic science and it is necessary to monitor changes in order to ensure the best possible practice. Continuity of quality improvement is maintained in constant search for the best approach in patient care. This process begins with identifying the goal and deciding on measures to achieve that goal. Lack of knowledge of improvement process greatly affects results. Another factor is the poor selection of participants and lack of experts. Inadequate choice of changes to be analyzed is clearly a bad sign in itself. One of the measures that has proved useful is the introduction of a "fast lane" for all those who have not been assessed as urgent conditions by primary triage. The fast lane directs such patients to a special part of the emergency center and thus relieves the work process and consequently reduces the waiting time for everyone.
Conclusion: There is always room for improvement, but it is necessary to recognize where these changes lead to the most significant positive effects and at the same time require unconditional support of structures that directly participate in decision-making. Emergency medicine is a dynamic branch and our goal must be for the dynamics of these changes to be in the direction of improvement.
Key words: quality improvement, emergency department

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PULMONARY INFECTIONS - IN AND OUT OF ICU

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The topic was lung infections and the way they are presented on X-rays but also on CT examinations in patients in emergency departments /prehospital care but also in patients in hospital and intensive care units (ICU).
We can divide pneumonias by etiological cause into: viral, bacterial and pneumonia caused by fungi and parasites Also, there is a pathological classification of pneumonia, which is based on the anatomical localization of the disease. Here we are talking about lobar pneumonias, bronchopneumonia's, hematogenous bacterial infection and interstitial pneumonias. Interstitial pneumonia are not only reserved for viruses as we thought earlier but also for atypical bacterial causes. The usual changes we see on chest X-ray (CXR) are patchy or diffuse ground glass opacities (GGO) and reticulation. On CT we can see centrilobular nodules, fine intralobular lines, bronhovascular thickening, ground glass attenuation, lobular consolidation, and septal thickening. Lobar pneumonia is characterized by filling of the alveolar spaces with exudate with very little or no tissue destruction. This process typically spreads from one segment to another. The process begins at the level of the lung parenchyma along the visceral pleura. The infection spreads through Kon's pores interalveolar pores, with centripetal type of progression, presenting as relatively confluent or homogeneous, fields of alveolar consolidation, sometimes covering the entire lobe. The typical pattern of lobar pneumonia on CXR is a homogenous air-space consolidation with air bronchogram present. On CT we see one or more fields of subpleural alveolar consolidation, blurred margins, which at the beginning of the disease is located along the fissures and progresses by segmental and continuous opacification, sometimes of the whole lobe, also leaving the air bronchogram present. Bronchopneumonia is different from lobar pneumonia. It mainly affects the distal airways and alveoli. There is a somewhat slower course compared to lobar pneumonias where we said that the progression of the findings is very fast. Although it is characterized by a slower flow, the microorganisms that cause it are much more virulent. The changes that are seen are present on CXR and CT as multifocal and bilateral consolidations (the era of covid pneumonias has deviated us a little from the usual thinking and we forget that bronchopneumonias are often bilateral as well). Air bronchography is usually absent. Complications involve the formation of cavitation and pneumatocele. Pneumonias caused by gram-negative causes are usually nosocomial infections that occur in hospitalized patients. These are also common pneumonias in patients on mechanical ventilation or those with intravenous cathetersNon-resolving pneumonia is pneumonia in which, after two weeks of therapy, the therapeutic response is still inadequate, ig more than 50 percent of the X-ray described changes remain present. Also, it is pneumonia that after 4 weeks still presents residual inflammatory fields on the radiography.

PULMONARY EDEMA-DON'T ALWAYS BLAME THE HEART

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Pulmonary edema is differentiated into two categories—cardiogenic and noncardiogenic. Both result from acute fluid accumulation in the alveoli, with resultant hypoxemia and respiratory distress. Cardiogenic PE primarily results from increased pulmonary hydrostatic pressure, which causes plasma ultrafiltrate to cross the pulmonary capillary membrane into the interstitium. In contrast, noncardiogenic pulmonary edema most often results from permeability changes in the pulmonary capillary membrane itself. Understanding the differences between cardiogenic and noncardiogenic

pulmonary edema is essential for effective therapeutic intervention to occur. More than 1 million patients are admitted each year with a diagnosis of pulmonary edema secondary to cardiac causes (heart failure). An estimated 190,000 patients are diagnosed with acute lung injury each year. About 1.5 to 3.5 cases/100,000 population are diagnosed with ARDS. The most common cause of noncardiogenic pulmonary edema is acute respiratory distress syndrome (ARDS); this article highlights some less common causes of noncardiogenic pulmonary edema, including transfusion-related acute lung injury (TRALI), neurogenic pulmonary edema, preeclampsia/eclampsia, opioid overdose, salicylate intoxication, high-altitude pulmonary edema, chronic severe anemia ,drowing. The treatment of non-cardiogenic pulmonary edema is specific in relation to the cause that led to the development of edema. For most non-cardiogenic pulmonary edema, one of the first therapeutic procedures is oxygenation and non-invasive lung ventilation, which has proven to be the best and sometimes the only therapeutic option. The aim of this paper is to recall these types of non-cardiogenic pulmonary edema, where some are very rare in our work, but which belong to the urgency of the condition.

ACS: PRE-TREATMENT STRATEGY

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Pre-treatment defines a strategy according to which antiplatelet drugs, usually a P2Y12 receptor inhibitor, are given before coronary angiography and when the coronary anatomy is nknown.Although a rationale for pre-treatment in NSTE-ACS may seem obvious, for achieving sufficient platelet inhibition at the time of PCI, large-scale randomized trials supporting a routine pretreatment strategy with either clopidogrel or the potent P2Y12 receptor inhibitors prasugrel and ticagrelor are lacking. The randomized Comparison of Prasugrel at the Time of Percutaneous Coronary Intervention or as Pretreatment at the Time of Diagnosis in Patients with Non-ST Elevation Myocardial Infarction (ACCOAST) trial demonstrated a lack of any ischaemic benefit for pre-treatment in NSTE-ACS patients, but instead, a substantially higher bleeding risk with prasugrel pre-treatment. In line with these results, observational data on pre-treatment with ticagrelor prasugrel, and clopidogrel were reported from the Swedish Coronary Angiography and Angioplasty Registry (SCAAR) in 64 857 NSTE-ACS patients. In this large dataset on pre-treatment, the authors reported that P2Y12 receptor inhibitor pre-treatment in NSTE-ACS patients was not associated with improved ischaemic outcomes, but instead, with a significantly increased risk of bleeding events.With respect to pre-treatment data for ticagrelor, the recently published ISAR-REACT 5 trial showed that a prasugrel-based strategy with deferred loading after knowledge of coronary anatomy in NSTE-ACS patients was superior to a ticagrelor-based strategy that implied a routine pre-treatment strategy. Importantly, there was no apparent benefit of a pretreatment strategy (that utilized ticagrelor) in that study. Based upon the available evidence, it is not recommended to administer routine pre-treatment with a P2Y12 receptor inhibitor in NSTE-ACS patients in whom coronary anatomy is not known and an early invasive management is planned. For patients with a delayed invasive management, pre-treatment with a P2Y12 receptor inhibitor may be considered in selected cases and according to the bleeding risk of the patient. Fortunately, the recommended standard treatment with potent P2Y12 receptor inhibitors (ticagrelor or prasugrel) exhibits a fast onset of action, thereby allowing LD administration after diagnostic coronary angiography and directly before PCI. Of note, a routine pre-treatment strategy may be deleterious for a relevant proportion of patients with diagnoses other than NSTE-ACS (e.g. aortic dissection or bleeding complications including intracranial bleeding) and may increase bleeding risk or delay procedures in patients scheduled for CABG after diagnostic angiography.

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SNAKE BITE - CASE REPORT

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Introduction: From 3500 known species of snakes in our area there are only three venomous from the group of vipers - the most widespread European "Vipera berus", much more venomous viper "Vipera ammodytes" and the smallest and the most harmless "Vipera ursinii". Snake venom is a mixture of several toxic proteins and enzymes and dominant gram-negative and anaerobic flora of the oral cavity which has a diverse and complicated mechanism of action (neurotoxins, hemolysins, cardiotoxins and angiotoxic). Snakes attack only from fear, if they are in danger either due to injury or during the mating season and while nurturing the young. The bite is lightning fast and it is difficult to distinguish the types of snakes. The typical appearance of the venom is a triangular head, a narrowed neck and Cain's sign (broken dark line along the entire length of the body. "Vipera ammodytes" has a small one horn on top of head. After the bite, two characteristic painful wounds remain 8 mm apart. The further course is caused by the elapsed time since the bite: local mentions - a sudden swelling with a rapid increase, which is the most useful sign in the differential diagnostic in terms of toxins or not, discoloration of the skin around the bite and enlargement of the lymph glands and generalized the effect of the poison on the blood and nervous system and death occurs due to DIC. Further development of symptoms also depends on the. Location of the bite, adequate first aid, physical exertion, age and current health condition of the victim, accompanying bacterial infections and the season. There are various dilemmas in treat and there is no general agreement. Based on the mechanism of action of the poison, first aid implies immobilization of the bitten part of the body and fast transport to the first medical aid in the fight against DIC and preservation of life without tying under the bite site, which disrupts normal circulation.
The aim of this paper is to point out the importance of proper treatment of this highly fatal single wound.
Case:Visibly frightened 70-year-old patient he comes with a twisted and tied forefinger of his left hand due to a snake bite after working in his vineyard for 20 km. from our clinic. In the area of the distal phalanx, there are characteristic single wounds with the imprint of a very tight silk thicker rope in the proximal phalanx. No other problems (rhythmic heartbeat, TA: 150/90, normal respiratory noise). The wounds were treated, the bandage was removed intravenous corticosteroid therapy wasgiven and he was sent to the infectious ward, where observation and further treatment continued, and after the end of the treatment, he was released from the ward.
Disccucion: Bearing in mind the importance and necessity of moderate physical activity primarily in natural conditions as a significant factor in the quality of health and life expectancy and all imminent dangers are prevented as an important factor in eliminating all cruel threats, and for us professionals, the role of educator is more important than therapist with the motto "Better to prevent than to treat".
Conclusion: As the final outcome is influenced by various factors, each in its own way significant and the presence of various dilemmas in the care and lack of general agreement, it is necessary to harmonize views and develop a unique protocol for the treatment of this highly fatal bite wound.

EM CASES IN UNDERWATER AND HYPERBARIC ENVIRONMENTS: THE USE OF IN SITU SIMULATION AND LEARNING TECHNIQUE

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Introduction: Hyperbaric chambers and underwater environments are challenging and at risk of serious accidents. Personnel aiming to assist patients and subjects should be appropriately trained, and several courses have been established all over the world. In healthcare, simulation is an effective

learning technique. However, there have been few peer-reviewed articles published in the medical literature describing its use in diving and hyperbaric medicine.
Methods: We implemented the curriculum of the Master's degree in hyperbaric and diving medicine held at the University of Padova with emergency medicine seminars created by the faculty and validated by external experts. These seminars integrated traditional lectures and eight in-situ simulation scenarios.
Results: For the hyperbaric medicine seminar, simulations were carried out inside a real hyperbaric chamber at the ATIP Hyperbaric Treatment Centre, only using air and reproducing compression noise without pressurization to avoid damages to the manikins. The four scenarios consisted of hyperoxic seizures, pneumothorax, hypoglycemia, and sudden cardiac arrest. Furthermore, we added a hands-on session to instruct participants to prepare an intubated patient undergoing hyperbaric oxygen treatment with a checklist, and simulating the patient transfer inside and outside the hyperbaric chamber. The diving medicine seminar was held at the Y-40 The Deep Joy pool in Montegrotto Terme (Italy), also involving SCUBA/ breath-hold diving (BHD) instructors to rescue subjects from the water. These diving medicine scenarios consisted of: neurologic syndrome ("taravana/samba") in BHD; drowning of a breath-hold diver; pulmonary barotrauma in BHD; decompression illness in a SCUBA diver.
Conclusion: With this experience, we report the integration of simulation in the curriculum of a teaching course in diving and hyperbaric medicine. Future studies should be performed to investigate learning advantages, concepts' retention, and satisfaction of participants.

ATIPICAL PRESENTATION OF PULMONARY THROMBOEMBOLISM AND MEDICOLEGAL SIGNIFICANCE

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Pulmonary embolism (PE) is a vascular disease, which clinically and pathophysiological represents a condition that results from obstruction (clogging) of one or more branches of the pulmonary artery with a thrombus or thrombi originating from a venous system. In rare cases, PE may be non-thrombotic, ie. Emboli can be bacteria, parasites, malignant tissue, fat droplets, air bubbles, amniotic fluid, and septic emboli.
Globally, PE among cardiovascular diseases ranks third after ischemic heart disease and stroke. The annual incidence is 100-200 cases per 100,000 inhabitants. In the United States (US), the prevalence of PE is 40-50 per 100,000 populations, and in France the incidence is 6% per 10,000 populations. In intensive care units, PE is the leading cause of morbidity and mortality in the United States. PE usually occurs masked by various and nonspecific symptoms. When undiagnosed and untreated, PE mortality rate is higher than 90%. The clinical likelihood of PE happening described as high, medium, and low is estimated on the basis of risk factors, symptoms, and signs as well as Wells, Geneva, Pissa, and PESI scores, and whether there is low or high risk, estimation is done based on PESI scores.
Thrombolytic drugs are the preferred therapy for high-risk PE followed by a shock or persistent hypertension, and anticoagulant therapy is the basis of treatment for low- and medium-risk PE.
The case of a patient admitted for gastric pain resulting from PE is presented.
Key words: Pulmonary embolism, atypical imaging, incidence and prevalence, therapy.

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DIFFERENTIAL DIAGNOSIS OF WIDE COMPLEX TACHYCARDIA

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Wide complex tachycardia (WCT) is an electrocardiographic record of heart rate over 100/minute and width of QRS complex over 120ms.The majority of WCTs, about 80%, are ventricular tachycardia (VT) and the rest are supraventricular (SVT) in origin, but aberrantly conducted. This implies conduction by left or right bundle branch block of His (about 15-20% WCTs) or associated with pre-excitation (WPW syndrome-1.6% of all WCTs). With regard to the regularity of the rhythm, WCTs may be irregular or regular. However, there are WCTs that result from the effects of metabolic and/or toxic agents. One group of these disorders are based on the sodium channels blockade on the membrane of cardiomyocyte. Other drug groups may induce WCT as a result of impaired repolarization and prolongation of QTc intervals. There are numerous algorithms and criteria for electrocardiographically distinguishing the origin of WCT. The most important of them are: Brugada algorithm, Wellens criteria, Vereckei algorithm, „Lead II R-wave-peak-time criterion“, Griffin and Bayesian algorithms. However, none of these criteria, given the accuracy and practical applicability, especially in emergencies, is perfect. WCT algorithms perform poorly can lead to misdiagnosis, mismanagement and potential harm to the patient. It is of great benefit to have an old patient's ECG or previous medical records for comparison. The clinical appearance of a patient with WCT varies from a feeling of mild discomfort and
palpitations to severe hemodynamic disorders. The main factors that determine a patient's tolerance for tachycardia of any origin are: heart rate, heart size, severity of underlying clinical problem and associated conditions. Treatment of a patient with WCT is different. For SVT aberrantly conducted a drug of choice is intravenous (IV) adenosine. The other drugs can also be given: verapamil, diltiazem and beta blockers. Atrial fibrillation (AF) with bundle branch block should be treated according to AF guidelines (diltiazem or beta blocker), except if AF with WPW is suspected (procainamide). Electric cardioversion is an initial treatment of choice if the patient is hemodynamically unstable. In WCT that is presumed to be VT, patients who appear to be unstable should undergo electric cardioversion with recommended energy of 100J. In clinically stable patents a pharmacologic cardioversion with amiodarone, procainamide or lidocaine should be attempt. WTC that is caused by metabolic and/or toxic agents should be treated in relation to underlying condition.

Key words: wide complex tachycardia, algorithms, clinical appearance, treatment.

DIFFERENTIAL DIAGNOIS OF HEMOPTHYSIS IN EMERGENCY DEPARTMANT

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Introduction: Hemoptysis is the expectoration of blood from the pulmonary parenchyma or airways. It can range from the small amounts of blood present in the spit to massive bleeding, which can be vital for the patient, by airway obstruction and disturbed gas exchange. Hemoptysis can itself be a life-threatening condition. It can also be a sign of very serious conditions such as lung cancer, bronchiectasis or tuberculosis. Although the focus of emergency care of hemoptysis is the identification of the bleeding spot and its arrest, the etiology of the process itself is something that dictates the course of action and therapeutic strategy. Together with the degree of bleeding, it often determines the outcome. The aim of this abstract is to describe, through case reports and literature review, the diversity of clinical, pathophysiological and anatomical characteristics of hemoptysis, which precisely determine the differential diagnosis of this condition.

Method: The abstract presents a case of a younger man, a long-time smoker, who reported to the Emergency Centre for sub-massive hemoptysis that has occurred before 24 hours. The performed diagnostics, including laboratory tests, lung RTG, and CT pulmonary angiography did not determine

the cause of the bleeding. The patient was referred to the Pulmonology Clinic, where bronchial arteriography showed the presence of tortuous and dilated bronchial vessels, a frequent change in smokers, in the form of hypervascularization of the bronchial wall. A review of the PubMed database, with reference to the differential diagnosis of hemoptysis, found different cases of airway bleeding, caused by both common and known etiologic factors, and situations where hemoptysis occurs as a symptom, of rare conditions, and present malformations.

Results: There are five categories of etiological factors that cause hemoptysis: infectious, neoplastic, vascular, autoimmune, and drug-induced. In adults, the most common cause is acute respiratory infection (bronchitis, pneumonia), followed by bronchiectasis, asthma, chronic obstructive pulmonary disease, malignancy and tuberculosis.

Conclusion: Hemoptysis is an emergency condition with a mortality rate of 30-50%. The anamnesis, physical examination and diagnostic procedures are intended to identify the vitally endangered patient, to identify the bleeding spot and to stop it, as well as to discover the conditions that caused the hemoptysis to occur. The clinical outcome depends on the etiologic factor and the patient's condition, and differential diagnosis and the multidisciplinary approach that exists in emergency medicine are of paramount importance for adequate patient treatment.

HYPERTENSION MANAGEMENT

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The most commonly used definition of arterial hypertension it is condition when measured values of systolic pressure ≥ 140mmHg were and diastolic pressure ≥90mmHg.

Arterial hypertension is a lidding risk factor for cardiovascular, cerebrovascular and kidney disease, and is one of the largest public health problems of today in the whole world. Any increase in systolic pressure by 20 mm Hg, or diastolic pressure by 10 mm Hg doubles the risk of developing cardiovascular disease in a population of 40-70 years of age. According to WHO, cardiovascular disease are the leading cause of death in the worldwide; about 16.5 million people die each year, of which about 5 million in Europe. High blood pressure is responsible for 54% of cerebrovascular complications and 47% of ischemic heart disease; the greatest number of complication occurring in the working-age population (45-69 years).

According to the data base of the Institute of Public Health "Dr Milan Jovanovic Batut", in 2018 more than half of the cause of death was cardiovascular disease (51.2%), from which was 24.362 men (45.4%) and 29.306 women (54.6%). In 2019., doctors at Emergency Medical Service Kragujevac examined 4501 patients with diagnosis I10, which represents 9% of the total number of patients. The most common reason for patients coming is a resistant hypertension or hypertensive crisis.

Resistant hypertension is defined as blood pressure that remains uncontrolled in spite of the concurrent use of three antihypertensive drugs of different classes. The most common reason of this are: irregular use of prescribed therapy or disrespect non-pharmacological treatment measures, and mainly occurs in patients over 60 years of age.

The hypertensive crisis is acute increase blood pressure values above 180/120 mm Hg. It can be divided into 2 groups: -hypertensive emergencies, which represents acute, life-threatening increase blood pressure values associated with permanent damage to heart, brain or kidneys, and most commonly manifests as pulmonary oedema, heart attack, stroke, hypertensive encephalopathy; -hypertensive urgencies, it is also acute increase blood pressure values above 180/120 mm Hg, but is asymptomatic or includes symptoms such ad headache, epistaxis, tinnitus, vertigo and no permanent organ damage. Treatment of hypertensive emergencies begins immediately, with initial therapy and transportation in Clinical centre, where treatment of the patient continues. Treatment of hypertensive urgencies begins and ends at ambulance with oral antihypertensive therapy.

Key words: arterial hypertension, hypertensive crisis, therapy, ambulance

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NEW GUIDELINES AND TREATMENT OF ATRIAL FIBRILLATION

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Introduction Atrial fibrillation is the most common arrhythmia encountered in clinical practice. It is characterised by disorganised electrical activity in the atria. Atrial fibrillation (AF) is an abnormal heart rhythm. No recognisable P waves or co-ordinated atrial activity can be seen in any ECG lead. The QRS rhythm is irregularly irregular (i.e. there is no consistent R-R interval from beat to beat). In the absence of drug treatment or pre-existing disease affecting the AV node, the resulting ventricular rate will be rapid, usually 120-180 min-1 or faster. Despite good progress in the management of patients with atrial fibrillation (AF), this arrhythmia remains one of the major causes of stroke, heart failure, sudden death, and cardiovascular morbidity in the world.
Management, generally, the treatment goals for atrial fibrillation are to: reset the rhythm or control the rate and prevent blood clots, which may decrease the risk of a stroke. Treatment depends on the stability of the patient and his vital parameters. Asses using the ABCDE approach, give oxygen (if if the SpO2 is less than 94%), monitor ECG and obtain IV access. Monitor BP, SpO2 and record 12 lead ECG. Identify and treat reversible causes (4H, 4T), and assess for evidence of adverse signs (shock, syncope, myocardial ischemia, heart failure). If the patient with AF is stable (no adverse signs or symptoms) and is not deteriorating, pharmacological treatment may be possible. If less than 48 hours have passed, control both rhythm and rate. For rhythm control, give Amiodarone 300 mg IV over 20-30 min followed by Amiodarone 900 mg over 24 h (maximum 1,2g/24h). Control rate with β-Blocker or diltiazem. In general, patients who have been in AF for > 48 h should not be treated by cardioversion (pharmacological or electrical). Control only rate with β-Blocker or diltiazem. Urgent treatment, rhythm control by electrical cardioversion, is required if the patient is unstable. Ensure that the defibrillator is set to deliver a synchronised shock. This delivers the shock to coincide with the R wave. An unsynchronised shock could coincide with a T wave and cause ventricular fibrillation (VF). Attempted electrical cardioversion on conscious patients is always undertaken under sedation or general anaesthesia, Start with 120-150 J biphasic shock and increase in increments if this fails. For atrial fibrillation use anteroposterior defibrillator pad positions when it is practicable to do so. When delivering the shock, press the shock button and keep it pressed until after the shock has occurred - there may be a slight delay before the shock is delivered. Repeat up to 3 attempts. Then continue whit Amiodarone 300 mg IV over 10-20min followed by Amiodarone 900 mg over 24 h (maximum 1.2g/24h). Seek expert help.
LITERATURE: ERC ALS (Advanced life support), Atrial Fibrillation (Management of) Guidelines ESC (European Society of Cardiology) Clinical Practice Guidelines.

NON ISCHEMIC ST ELEVATION

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Prompt and accurate diagnosis of ST elevation heart attack is important because of the early initiation of revascularization protocols. The goal is to prevent further damage to the myocardium, reduce mortality and complications. Certain diseases and conditions of non-ischemic etiology can mimic ST elevation and mislead the physician into making the correct diagnosis. Understanding the common patterns of ST elevation that are not caused by ischemia contributes to the rapid and adequate care of the patient with the efficient use of resources.
Key words: myocardial infarction, non- ischemic st elevation, early repolarization, Brugada syndrome, left branch block, broken heart syndrome, hyperkalemia, hypercalcemia, pericarditis.

CARDIAC EMERGENCY IN SERBIA- SERBIAN STEMI NETWORK

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Acute coronary syndrome (ACS) is a syndrome (set of signs and symptoms) due to decreased blood flow in the coronary arteries such that part of the heart muscle is unable to function properly or dies. Due to atherosclerotic changes in the coronary arteries,the myocardium suffers from insufficient blood supply. Acute coronary syndrome is commonly associated with three clinical manifestations, named according to the appearance of the electrocardiogram (ECG):ST elevation myocardial infarction(STEMI, 30%),Non-ST elevation myocardial infarction(NSTEMI, 25%),Unstable angina(38%). According to the data published by the World Health Organization(WHO), 6 million people develop acute myocardial infarction worldwide each year, where the fatal outcome ensues in 25% of these cases. According to Serbian ACS registry there were 19.389 ACS cases in 2016. (274,4/100.000). There were 4.534 deaths of ACS in 2016.(64,2/ 100.000 citizens). Every day 47 persons suffered ACS and 15 of them end tragically. REACT(Rapid Early Action for Coronary Treatment) study shows that only 3 of 11 patients can regonised myocardial infarction. 90% of those who survived infarct think that the sign of a heart attack is always heavy pain in the middle fo the chest, only 67% know that pains in the hands can also be a symptom of a heart attack, only 21% know that persistent sweating can also be a symptom.. Only 23% patients call the Emergency services, 60% were brought by friends and relatives to the hospital,16% with myocardial infarction drive themselves to the hospital! Studies show substantial delay times from AMI symptoms to hospital arrival, with means ranging from 4.6 to 24 hours and medians from 2 to 6.4 hours.
EMS transport time is estimated to average 7 to 22 minutes, so a large portion of pre-hospital delay is attributable to patient recognition and action. One minute of delay in transport shortens life for 11 days. 33 minutes of delay shortens life for one year. Door-to-balloon (D2B) is a time measurement in emergency cardiac care (ECC), specifically in the treatment of ST segment elevation myocardial infarction(or STEMI). The American Heart Association's guidelines recommend that the artery be reopened within 90 minutes for best patient outcomes. This 90 min period of time can be thought of as three 30-minute increments: 30 minutes from the time symptoms start to the time the patient has engaged medical care, a diagnosis of STEMI has been made and the cardiac cath team is alerted-Onset to door time (O2D),30 minutes from cardiology team mobilization to patient arrival in the cardiac cath lab-Door to needle time(D2N),30 minutes from start of the procedure to the opening of the blocked artery. Latest paper work shows taht the median O2D time was 2.0 hours and the median D2B time was 59 minutes. Special entity is EMS-to-balloon (E2B) and for that exists STEMI NETWORK. There were 58 coronary units in Serbia and 4 large centers: Belgrade,Nish,Novi Sad,Kragujevac with 4 STEMI networks.

Key words: Cardiac emergency; STEMI; NSTEMI; Unstabile angina; Network

THROMBOEMBOLISM AND MEDICOLEGAL SIGNIFICANCE

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According to the forensic point of view, thrombosis is a phenomenon that occurs only for life, before it occurs death and represents intravital intravascular blood coagulation in blood vessels or heart cavities. Deep vein thrombosis and pulmonary embolism are two aspect of the same disease know as venous thromboembolism. Pulmonary thromboembolism (PTE) is a common cause of death but is frequently undetected by clinicians in spite of advanced diagnostic techniques. PTE is a major

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complication of critical injury and has an unpredictable course with associated high morbidity and mortality.
PTE is often non-cardiac causes of sudden death. A sudden natural death (mors subita) represents dying of seemingly healthy persons for a relatively short period of time from the natural causes. The World Health Organization defines a sudden death as a death occurring within 24 hours after symptoms and signs have appeared. Sudden death is characterized by rapid and sudden fatal outcome, so there is no time for clinical diagnosis of the cause of death. In all cases of suspected sudden death due to PTE, autopsy, documentation and studies concerning pulmonary emboli are mandatory.
PTE is more common with advancing age, with obese subjects and in the majority of instances there is a predisposing factor such as trauma, surgical operation, and confinement to bed or immobility from another cause. Even prolonged sitting can lead to deep vein thrombosis; it has been described as a hazard of long air flights. Significant proportions, about 20%, occur unexpectedly in the absence of any of these usual factors, making the legal problem of causation difficult.
Medicolegal importance of PTE is to know if a pulmonary embolus arose prior to, or subsequent to, some traumatic event. PTE usually occurs about two weeks after an injury or surgery, but the range of time during which a cause and effect mechanism operates can be anything from about 2 to 90 days. It is vital to show that the deep vein thrombosis post-dated the traumatic event, if an association is to be established. Histological examination is required for observation of chronological changes of the trombi. Chronological evaluation is an important factor to determine whether the death coincides with the date of a specific accident or instead there is an earlier onset of PTE.
Medicolegal problems in cases of sudden death are: defining the origin (natural or violent) and causes of death; defining the relationship of injury and illness and medical responsibility. The term medical responsibility implies: untimely diagnosis of the disease; unspecified or misdiagnosed disorders and inadequate treatment. The autopsy has been used to identify the rate of in PTE patients, but the decline in autopsy rates has led to insufficient recent data from which to common confidence on the true rate of death from latent PTE.
Key words: thromboembolism, sudden death, autopsy.

EARLY HOSPITAL MANAGEMENT OF PATIENTS WITH CHEST PAIN SUSPECTED OF ACUTE MYOCARDIAL INFARCTION

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Chest pain is often discomfort in emergency room (ER)of which acute myocardial infarction (AMI) is diagnosed in 15-22%. Anamnesis, examination, electrocardiogram and seral measurement of high-sensitivity Troponin T (hsTnT) are basics of assessment of patients with suspected AMI. Every of these elements are just one of many tools in algorithm and has limited value. The difference between typical and atypical symptoms is not especially usefulin differential diagnosis and big clinical experience helps in better diagnosis. Patients with AMI and clear ECG or non-specific changes are represented in 15-20% with the fact that these patients have better prognosis in relation to patients with clear changes on ECG. Circulating biomarkers of myocardial necrosis like high-sensitivity troponins (hsTnT and hsTnI) allow a better evaluation of myocardial infarction, but have their limitations. HsTnT exists in other cardiac conditions (heart failure or pulmonary embolism) and non-cardiac conditions (stroke, renal failure). Because of low sensitivity of hsTnT in first 3 hours from the beginning of discomfort, new markers are being explored (micro RNA-208,-499,-133,-1, myosin-binding protein C, copeptin, ischemia-modified albumin, E-selectin, P-selectin, , myeloperoxidase, heart-type fatty acid binding protein etc.). For better triage and management of patents suspected of acute coronary syndrome (ACS), it is advisable to use scoringfor stratification of the risk of death and non-fatal cardiac ischemic events in the next 6 weeks: GRACE, TIMI, HEART, EDACS. Scores achieve quick separation of high-

risk patients witch should be hospitalized and prevent early discharge patients suspected of having ACS. In Europe the most used HEART score.
Patients with low-risk for AMI should be additional tested which includes ergo metric test echocardiography, computer tomography coronary artery or NMR of the heart. Actually echocardiography should be an integral part of the medical examination in ER for early hospital diagnostics AMI and prehospital administration should be considered. Thus, patients with ACS would be fully detected, reduced hospital treatment, reduced treatment costs.

APPROACH TO PATIENTS WITH ACUTE GASTROINTESTINAL BLEEDING

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Acute gastrointestinal (AGI) bleeding is a potentially life-threatening abdominal emergency that remains a common cause of hospitalization. It has been associated with increasing dual anti-aggregation therapy use, non steroidal anti-inflammatory drug use and the high prevalence of Helicobacter pylori infection in patients with peptic ulcer bleeding.
The aim of this paper is to show the incidence and the most common signs and symptoms of gastrointestinal bleeding, to present initial clinical evaluation, diagnostic methods, the main causes of gastrointestinal bleeding, endoscopic haemostatic modalities and treatment of AGI. Acute GI may present as a clinical emergency, therefore priority is represented by vital signs evaluations, respiratory and circulatory function with hemodynamic resuscitation if necessary and set up the most adequate diagnostic and therapeutic approach, based on the suspected etiology. Risk stratification is based on clinical assessment and endoscopic findings. Early upper endoscopy (within 24 hours of presentation) is recommended in most patients because it confirms the diagnosis and allows for targeted endoscopic treatment. The haemostasis technique should be chosen based on type, etiology of the bleeding and including epinephrine injection, thermo coagulation, application of clips, and banding. Endoscopic therapy results in reduced morbidity, hospital stays, risk of recurrent bleeding, and need for surgery. Although administration of proton pump inhibitors does not decrease mortality, risk of re bleeding, or need for surgery, it reduces stigmata of recent haemorrhage and the need for endoscopic therapy. Arteriography with embolization or surgery may be needed if there is persistent and severe bleeding. Cooperation with radiologists and surgeons is essential to cope with challenging clinical cases with the aim of a general optimization of acute gastrointestinal bleeding.
Key words: acute gastrointestinal bleeding, upper endoscopy, hemostasis technique

AORTIC DISSECTION

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Aortic dissection represents just one piece of the spectrum of aortic diseases, and for that sake the acute aortic syndrome. Acute aortic syndrome encompasses: aortic dissection, intramural hematoma, penetrating atherosclerotic ulcer, traumatic aortic injury, pseudo aneurysm, aortic rupture. Acute aortic syndrome is always a diagnostic conundrum, especially in the general practitioner office, emergency room or worse in the field, where it sometimes requires life or death decisions. In order to avoid this in most cases it is enough or better to go "by the book" and respect some diagnostic algorithms. This algorithm is made of clinical score which is based on pain features, objective findings and pre-existing conditions. Along with this score comes laboratory work up with d-dimer, and basic imaging. In such doing, the possibility of error is brought to a minimum. Errors come in for of under

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or over diagnostic of acute aortic syndrome. Under diagnostics means false negative clinical judgement where there is acute state that is not recognized which is the worst scenario for the patient. This scenario greatly reduces the possibility of good outcome. On the other hand, over diagnostics represents false positive clinical judgement, and is often a consequence of not enough clinical experience and not knowledge. This scenario is increasing good outcome probability for the patient but decreases good outcome for the doctor.

Key words: Aorta, dissection, syndrome, algorithm.

EVERYTHING ABOUT ICD

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CIED (Cardiac Implantable Electronic Devices) therapy is ever growing and emerging therapy which includes various electronic devices: Pacemakers, Implantable Cardiac Defibrillators (ICD), Cardiac Resynchronization Therapy (CRT), and Loop Recorders (ILR).

ICD is a life saving device for the patients with high probability for sudden cardiac death (primary prevention) and in patients after survived sudden cardiac death (secondary prevention). ICD has several therapy modalities which include classic anti brady cardiac function, antitachycardia pacing, and intracardiac defibrillation. Regarding the fact that defibrillation is delivered intracardially, the energy used is much lower than in external defibrillation. Since the use of CIED is ever increasing in number of patients implanted, every day practice becomes ever more difficult due to many mishaps and misbelieves in this field of medicine.

Key Words: CIED, ICD, CRT, defibrillation, therapy, sudden cardiac death

HEART IN TRAUMA

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Introduction: Trauma is one of the leading causes of death worldwide. Blunt cardiac injuries (BCI) are generally seen in the setting of high impact trauma. Motor vehicle crashes, pedestrians being struck by motor vehicles and trauma secondary to falls are the most often causes of blunt cardiac injury. There are not enough guidelines of high Level of Evidence regarding BCI

Methods: A review of online database of relevant articles and available literature for the past 15 years.

Results: Spectrum of cardiac injury can be classified, according to American Association for the surgery of Trauma (AAST) Injury scale, from Grade I to Grade IV, and they range from blunt cardiac injury with minor electrocardiogram abnormality (non-specific ST of T wave changes, premature atrial or ventricular contractions, or persistent sinus tachycardia) to blunt avulsion of the heart. Diagnosing for blunt cardiac injury (BCI) can be a wary difficult and challenging task. Injuries to the heart muscle, valvular injuries, A high index of suspicion and careful evaluation of mechanism of injury is essential for timely diagnosing of BCI. It is of great importance to determine what diagnostic studies and tests are specific enough to rule out BCI. There have been few recommendations for screening for BCI and they all address admission electrocardiogram, transthoracic echocardiogram, transesophageal echocardiogram, cardiac enzymes (troponin and creatinine phosphokinase), computed tomography and magnetic resonance imaging. First Eastern Association for the Surgery of Trauma (EAST) recommendations dating from 1998 have been revised and changes were made owing to cotemporary diagnostic modalities we have today. In 2012, EAST published new guidelines that

suggest only one Level 1 guideline saying that admission electrocardiogram should be performed on all patients in whom BCI is suspected. Other guidelines are based on lower scientific evidence but can be useful in screening for BCI
Conclusion: Diversity in presentation which is immense, is only one of the reasons why we should be "on alert" when we are facing patients who sustained high impact trauma. Limited diagnostic tools in prehospital settings, where majority of the injuries occur, prompt these patients to emergency departments (ED), preferably Level I Trauma centers. Detailed evaluation if of most importance and we need stronger evidence to „rule out" while screening for BCI.
Key words: blunt, cardiac trauma, guidelines

SUMARY OF THE NEW GUIDELINES FOR MENAGEMENT PATIENTS WITH SVT

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Introduction: SVT are common and patients are often symptomatic, requiring management with drugs and electrophysiological procedures. The European Society of Cardiology (ESC) published management Guidelines for supraventricular tachycardia (SVTs) in 2003; corresponding US guidelines have also been published, the most recent being in 2015.
Aim: To provide expert recommendations for professionals participating in the care of patients presenting with SVT.
Data sources and data extraction: A review of the literature with Key words: SVT, ESC, Guidelines. The search is performed through: PubMed, Medline and electronic journals available through KoBSON.
Results of data synthesis: New recommendations in 2019: Ivabradine alone or in combination with a beta-blocker should be considered in symptomatic patients with inappropriate sinus tachycardia. – IIa. Ibutilide (i.v.) may be considered for acute therapy of focal atrial tachycardia. – IIb. Ivabradine for postural orthostatic tachycardia syndrome, and ivabradine with a beta-blocker for chronic therapy of focal atrial tachycardia, may be considered – IIb. Patients with atrial flutter without AF should be considered for anticoagulation, but the threshold for initiation is not established – IIa. Ibutilide (i.v.), or i.v. or oral (in-hospital) dofetilide are recommended for conversion of atrial flutter – I. High-rate atrial
pacing is recommended for termination of atrial flutter in the presence of an implanted pacemaker or defibrillator – I. i.v. amiodarone is not recommended for pre-excited AF – III. Performance of an EPS to risk-stratify individuals with asymptomatic pre-excitation should be considered – IIa. Catheter ablation is
recommended in asymptomatic patients in whom electrophysiology testing with the use of isoprenaline identifies high-risk properties, such as SPERRI ≤250 ms, AP ERP ≤250 ms, multiple APs, and an inducible AP-mediated tachycardia – I.Non-invasive evaluation of the conducting properties of the AP in individuals with asymptomatic pre-excitation may be considered – IIb. Catheter ablation may be considered in a patient with asymptomatic pre-excitation and low-risk AP at invasive or non-invasive risk stratification – IIb Catheter ablations should be considered in patients with asymptomatic pre-excitation and LV dysfunction due to electrical dyssynchrony – IIa. AV nodal ablation with subsequent pacing ('ablate and pace'), either biventricular or His-bundle pacing, is recommended if a tachycardia responsible for TCM cannot be ablated or controlled by drugs – I. During the first trimester of pregnancy, it is recommended that all antiarrhythmic drugs are avoided, if possible – I. In pregnant women, beta-1 selective blockers (except atenolol) or verapamil, in order of preference, should be considered for prevention of SVT in patients without WPW syndrome – IIa. In pregnant women, flecainide or propafenone should be considered for prevention of SVT in patients with WPW syndrome and without ischaemic or structural heart disease – IIa.

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Conclusion: Guidelines summarize and evaluate available evidence proposing the best management strategies for an individual patient with a given condition. Guidelines and their recommendations should facilitate decision making of health professionals in their daily practice. The final decisions concerning an individual patient must be made by the responsible health professional(s) in consultation with the patient and caregiver as appropriate.
Key words: SVT, ESC, Guidelines

LEGAL PROBLEMS WITH SOLUTION IN EMERGENCY MEDICINE

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Introduction: Medicine, in general, is a profession that carries certain everyday's risks. Emergency Medical Services and Emergency Departments, often overloaded, working 24/7, are one big risky area of medical practice.
Review of literature: Every day working in the ED, we are facing many chances to deal with a medical-legal dilemmas (medical triage, consent and refusal of care, questions of decisional capacity and patient confidentiality, use of patient restraints, domestic violence, malpractice claims, protection of minors, dealing with the psychiatric patients, with prisoners, end-of-life issues (DNR), resuscitation…)One of the biggest problems in ED is overcrowding, which causes a bunch of other problems listed above. It is likely that a lot of pressure on ed staff leads to unintended mistakes, which are later complicated by legal consequences. The public expects to receive prompt and adequate medical attention from the emergency department for noncritical emergencies, as well as immediate expert initial medical care for acute illness and injuries. Medical triage is used as a useful tool in order to prioritize the patients in the ED, so patients with less urgent/non urgent complaints have longer waiting time, causing patient dissatisfaction and higher level of complaints Emergency physicians must be capable of determining a patient's ability to make treatment decisions, but must avoid manipulation of the patient to consent to an intervention. There should be no conflict between the legal and ethical considerations of treatment decisions made by physicians for patients who are unable to provide consent. Emergency physicians must evaluate the ability of critically ill patients to make treatment decisions in the context of the potentially serious consequences of the treatment options and the best-interest standards of care.
Discussion: Ethical issues cannot be divided from legal issues, and in an emergency department (ED) both of them are much more common than is usually recognized and discussed.. Most medical ethics guidelines are not so focused on the acute and critical scenarios that are common situation in the ED. In contrast, when ED staff recognizes ethical and/or legal problems, they often don't have enough time for an consultation and sufficient solving these problems. Hence, it is necessary to implement and develop ethics guidelines in emergency medicine. Also, basic knowledge of the law principles as it pertains to their emergency care and acute care practice is essential for ED staff.

X RAY IN PULMONARY INFECTION

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Lung infections are a source of high morbidity and mortality throughout the world. Pneumonia, as one of the main infectious lung disease, is responsible for many deaths, especially in the elderly and immune compromised patients which are rising because of the world HIV epidemic, advances in cancer chemotherapy, and expanding organ transplantation. Also increase in mortality is due to new etiologic agent and antibiotic resistant organisms. Pneumonia is an acute infection of the pulmonary

parenchyma that is associated with symptoms of acute infection and can always be visualized by radiology techniques – chest X ray (radiography) or computed tomography (sometimes performed as high resolution computed tomography) so it is clear that imaging plays a crucial role in the detection and management of patients with pneumonia. The pathologic classification of pneumonia is based of anatomic localization of the disease process: lobar pneumonia, bronchopneumonia or lobular pneumonia and acute interstitial pneumonia. Posteroanterior (PA) chest radiography (CXR) should be obtained whenever pulmonary infection is suspected. In most cases the plain film findings may be diagnostic of pneumonia and may eliminate the need for additional radiographic procedures. In 50% - 75 of casec communuty acquired pneumonias in previolosly healthy individuals are caused by s. Pneumoniae , m. Pneumonae, viral organisms or legionella pneumophila. S. pneumoniae pneumonia occurs in healthy people but it is much more common in alcoholic and other immune compromised individuals. Radiographic features include consolidation that is usually unilateral, but it may be bilateral and typically affect the lower lobes. Although it is lobar pneumonia it is uncommon for the lobe to be completely consolidated. Cavitation is rare and pleural effusions are uncommon and when present they suggest of the development of empyema. Sometimes in children especially the pneumonia may have a rounded, mass like appearance. This is called a round pneumonia; it results from centrifugal spread of the rapidly replicating bacteria by way of the pores of Kon and canals of Lambert from a single primary focus in the lung. Nosocomial pneumonias (acquired in the hospital by patients who are already ill) typically are caused by gram negates organism or s. Aureus. S. aureus pneumonia also occurs as a result of septic emboli in Intravenous drug abusers and Indwelling catheters. Radiographic features are: bilateral consolidation, cavitation, empyema, multiple nodules are and cavitation. E. coli causes necrosis, multiple cavities and usually affects lower lobes Atypical pneumonia syndrome describes pneumonias that do not respond to usual empiric antimicrobial therapy or do not have clinical features distinctive form the usual bacterial pathogens responsible for CAP. Originally, these atypical pneumonias were thought to be caused by viruses. However, other organisms have emerged as important causes of atypical pneumonia including M. pneumonia, L. pneumophila and Chlamidia. Radiographic features of m. pneumoniae are diffuse reticulonodular pattern to patchy consolidation, hilar adenopathya .
Primary respiratory viruses are Influenza virus, Parainfluenza virus, Respiratory syncytial virus (RSV) Adenovirus, Picornavirus. Radiographic features are in spectrum from normal radiograph to “tram tracks” and ring shadows, over inflation with air trapping and tree in bud opacities

CHEST PAIN MANAGEMENT IN PRE-HOSPTAL SETTINGS

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Chest pain is one of the most common symptoms that cause patients to address emergency medical services (EMS) or general practitioners. Pain is the reason why annually approximately 7 million patients in United States of America call EMS. According to research in Denmark, 17% of patient transport to hospital was due to chest pain.
Methods: Review of the relevant literature
Patients who report to a physician in prehospital settings can be divided into two categories: those with life-threatening conditions and those who do not have life-threatening conditions. This first group can be subdivided into patients with possible acute coronary syndrome (AKS)
and those with non-coronary conditions. The second group consists of diseases such as acute aortic discretion, pulmonary embolism, pneumothorax, acute pericarditis and oesophageal rupture. Failure to recognize the conditions presented as chest pain, which can be life-threatening to the patient, can lead to the patient's incapacitation for independent living and can result in death. That is why it is very important to make an adequate diagnosis and administer proper treatment in prehospital settings. However, limited diagnostic tools, usually only ECGs, make it impossible to make definitive

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diagnose. As a result, we have increased number of patients transported to the hospital or unnecessary load of emergency departments. In such a situation, when we have scarce diagnostic modalities available, the only way to make adequate diagnosis, although it also carries the risk of over-triage, is to take precise anamnestic data of the experienced chest pain, associated symptoms, risk factors followed by detailed physical exam. Summarizing obtained data and regarding current guidelines and recommendations, we can determine working diagnosis and initiate adequate therapy.

ACUTE MYOCARDIAL INFARCTION (AMI) IN COCAINE USERS

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Introduction: In the mid-1980s, Isner et al reported high grade ventricular arrhythmias, myocardial infarction; even sudden death was temporarily related to cocaine use. A striking observation in Isner's work was that cocaine use did not need to be chronic in order to precipitate a cardiac event. In some cases, recreational use was associated with myocardial infarction. Four years later, it became well established that adverse cardiac effects of cocaine use are a tragic reality. This report will focus on the development of myocardial infarction in cocaine users. It is important for the reader to appreciate that the use of cocaine also has been associated with other cardiac-related disorders, such as cardio myopathy, hypertension, aortic aneurysm and non-cardiac chest pain.
Data source and selection of materials: Retrospective analysis of literature with settings: Acute myocardial infarction, coronary artery disease, risk factors, cocaine. Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the Library.
Results of synthesis: Cocaine-induced myocardial infarction needs to be suspected in young patients presenting with infarction. Such patients do not voluntarily admit to cocaine use, and therefore direct inquiry about drug use is important. Diagnosis of cocaine-induced acute myocardial infarction is made by obtaining a careful history and physical examination of the patient along with appropriate laboratory tests, cardiac enzymes and classic electrocardiographic findings. While some patients will have a clear diagnosis, others may not. How doctor in prehospital settings can handling these cases? Those patients with evidence of acute transmural myocardial infarction and at high risk (e.g., elevated cardiac enzymes) need to be admitted for immediate therapy. If a cocaine user presents with ST elevation myocardial infarction within 6 hours of onset of chest pain, immediate thrombolytic therapy or acute percutaneous coronary intervention needs to be treat as every other patient with STEMI (Thrombolysis or PCI). Those patients with chest pain and history of using cocaine while electrocardiograms showed ST or T wave abnormalities must be observed with laboratory investigation. The number of studies suggests that ECG abnormalities were nonspecific and were mostly related to hypertensive heart disease or early repolarization.
Conclusion: Cocaine use may lead to the development of acute myocardial infarction, but the incidence of infarction is difficult to determine, and varies widely in the literature. Some, but not all, studies suggest that cocaine hastens the development of coronary artery atherosclerosis. Acute beta blocker use should be viewed with caution, since it may lead to a decrease in coronary flow and an increase in coronary artery resistance
Key words: Acute myocardial infarction, young, coronary artery disease, cocaine

CARNETT'S TEST

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Introduction: Pain originating from the abdominal wall has been described by Cyriax EF.for nearly 100 years ago but did not receive much attention until 1926, when a simple bedside test was proposed by Carnett JB by whom this procedure was named. Case reports in the early 1970s suggested that nerve entrapment could be the cause of abdominal wall pain and was able to be successfully treated with local injections. More recently, the consensus has been that abdominal wall pain is commonly unrecognized, overlooked, underdiagnosed, and understudied. This are leading to mistake to search for intra-abdominal visceral pain, resulting in expensive and unnecessary laboratory tests, imaging studies, consultations, and invasive procedures.
Data source and selection of materials: Retrospective analysis of literature with settings: Abdominal wall pain, Carnett test. Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the Library.
Results of synthesis: The Carnett test is a validated and crucial tool in the evaluation of abdominal wall pain. The clinician places the patient in the supine position and identifies the point of maximal tenderness on the abdomen; constant pressure is then applied to that spot. Next, the patient is asked to cross his or her arms over the chest, then to lift the head and shoulders from the examination table to tense the abdominal muscles. An alternative variant is to have the patient raise both legs with knees extended. A positive test elicits stable or worsened pain, indicating abdominal wall etiology. A negative test, in which pain improves, suggests that the pain is likely of intra-abdominal or visceral origin. It can be challenging to interpret results in patients with psychogenic abdominal pain. In women with tenderness during bimanual pelvic examination, the clinician should locate the spot of maximal tenderness and then remove his or her hand from the abdomen without changing the location and pressure of the vaginal fingers to see whether the pain changes. The clinician can then replace the abdominal hand on the tender spot and retract the vaginal finger to see whether the pain changes. The test is positive when external abdominal palpation elicits pain.
Conclusion: The differential diagnosis of a positive Carnett's test includes hernias, nerve entrapment syndrome, and irritation of intercostal nerve roots, thoracic disk herniations, anterior cutaneous nerve entrapment, rib-tip syndrome, myofascial pain, trigger points and rectus sheath hematomas. The diagnosis can be confirmed on ultrasound examination and a conservative approach to treatment can be adopted. Carnett's test may be diagnostic in this setting.
Key words: Carnett's test

PULMONARY THROMBOEMBOLISM

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Introduction: Pulmonary embolism (PE) may escape prompt diagnosis because clinical symptoms and signs are nonspecific. In epidemiological studies, annual incidence rates for PE range from 39-115 per100 000 population. In six European countries with a total population of 454.4 million, more than 370 000 deaths were related to venal thromboembolism in 2004, as estimated on the basis of an epidemiological model. Of these patients, 34% died suddenly or within a few hours of the acute event.
Data source and selection of materials: Retrospective analysis of literature with settings: Pulmonary thromboembolism, chronic thromboembolic pulmonary hypertension, acute thromboembolic disease Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the Library.

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Results of synthesis: Venal thromboembolism is considered to be a consequence of the interaction between patient-related and setting-related risk factors. Most important risk factors are: major trauma, surgery, lower-limb fractures and joint replacements, spinal cord injury, cancer (pancreatic cancer, haematological malignancies, lung cancer, gastric cancer and brain cancer carry the highest risk) and use of oral contraceptives, also. Pathophysiology cause of death is right ventricular failure due to acute pressure overload is considered the primary cause of death in severe PE. Respiratory failure in PE is predominantly a consequence of haemodynamic disturbances. ECG changes indicative of RV strain—such as inversion of T waves in leads V1-V4, a QR pattern in V1, a S1Q3T3 pattern, and incomplete or complete right bundle branch block—are usually found in more severe cases of PE; in milder cases, the only abnormality may be sinus tachycardia, present in 40% of patients. Finally, atrial arrhythmias, most frequently atrial fibrillation, may be associated with acute PE. We found that the most reliable indicator of patients with PE is sudden onset dyspnoea. Other symptoms include chest pain, fainting (or syncope), and haemoptysis. The occurrence of such symptoms, if not explained otherwise, should alert the clinicians to consider PE in differential diagnosis. This is the crucial step in the diagnostic work-up of PE. Next, the clinical probability should be assessed. Of these, the most frequently used prediction rules are the revised Geneva rule and the Wells rule If the clinical probability is low (20% or less), the most practical approach would be to measure the D dimer concentration by a quantitative assay. Treatment in the acute phase is based on haemodynamic and respiratory support, Initial anticoagulation and reperfusion treatment.
Conclusion: The optimal method to adjust (based on the patient's age or in combination with clinical probability) the D-dimer threshold, permitting the exclusion of PE while reducing the number of unnecessary imaging tests to a minimum, remains to be determined.
Key words: Pulmonary thromboembolism

ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION WITH COMPLETE OCCLUSION LEFT MAIN CORONARY ARTERY: CASE REPORT

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Introduction: Incidence of acute occlusion of LMCA is 0.04%-0.1%. Patients usually present as unstable angina, myocardial infarction and cardiogenic shock. LMCA supply about 75% of the left ventricular with right dominant type or balanced type and 100% in the case of left dominant type**.**
Case report: A 58 -year- old man was brought by ambulance to our emergency room an unstable condition, with chest pain, dyspnoea and cold sweating. There were clear ST elevation stacks on the ECG. In catheterization room were ordinated Dopamine and Noradrenaline and the patient was intubated on mechanical ventilation. Percutaneous coronary intervention (PCI) of LMCA and medial segment of LAD with implantation two stents was done. In spite of great flow in coronary arteries, the patient was hypotensive and transported to intensive care coronary unit (ICCU) during cardiopulmonary resuscitation. In ICCU patient's condition gets worse and cardiac arrest occurred.
Conclusion: The therapeutic strategies for total occlusion of LMCA include thrombolytic therapy, PCI, and emergency coronary artery bypass grafting (CABG). In emergency centres where is possible to do urgent cardiac surgery, should always be considered CABG procedure.
Key words: myocardial infarction left main, cardiogenic shock, resuscitation

EVALUATION OF PATIENTS WITH CHRONIC SUBDURAL HEMATOMA BEFORE AND AFTER OPERATION BY FACIT -FATIGUE SCALE

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Introduction: A chronic subdural hematoma is an intracranial hemorrhage that usually occurs in older age and develops as a result of minor head trauma. The most important etiological reason is that the parasagittal bridge veins that are stretched due to cerebral atrophy, which usually occurs with advanced age, bleed as a result of trauma. Symptoms and signs usually occur due to intracranial pressure increase and the most common symptom is headache and fatigue. The FACIT- fatigue scale is an internationally recognized, old fatigue measure based on classical test theory.
Methods: We followed between May 2013 and November 2019 and the data of the patients were analysed retrospectively. Patients with chronic subdural hematoma were evaluated with the Mann-Whitney U test in terms of their gender; the pre and post-operative values of the patients were compared statistically with the Wilcoxon test. The results were analysed statistically.
Results: Of the 35 patients, 7 (61.43 ± 19.63) (29-82) were women and 28 (63.89 ± 15.81) (31-84) were men. No statistical significance was found between women and men in terms of age (p= 0.635). FACIT fatigue scale was compared statistically before the operation (35.8 ± 6.95) (24-47) and after the operation (17.91 ± 8.73) (6-35) in patients with chronic subdural hematoma. It was found statistically significant (p< 0.001)
Discussion: Clinically, patients with chronic subdural hematoma were evaluated with the FACIT fatigue scale before and after the operation, and our study results were interpreted. It was found statistically significant. We are of the opinion that chronic subdural hematoma can be encountered frequently in advanced ages, and the evaluation and follow-up of these patients will be important with the FACIT- fatigue scale.
Key words: FACIT- fatigue scale, chronic subdural hematoma, operation

BILATERAL EMPYEMA FROM STREPTOCCOCUS AGALACTIAE: A CASE REPORT

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Introduction: Thoracic empyema, an infectious process defined by frank pus in the pleural space, carries a considerably high mortality (1). We present the case of bilateral empyema from Streptococcus agalactiae. Bilateral empyema is exceedingly uncommon, the incidence is 0.6%
Case report: We reported a case of a 41-year-old patient brought by ambulance to our emergency room in hemodynamically unstable condition, drowsy, with dyspnoea and cyanosis. He is i.v. drug abuser, but no drug use in the past 5 days and HCV positive. Upon entry, he was with mild fever, tachycardic, hypotensive, dyspnoic with low peripheral saturation. On auscultation, decreased breath sounds were heard, predominantly on the left side. Computed tomography (CT) revealed multilocular pleural effusion on the whole left side with hydroaeric levels, left lung atelectasis with ring zone with hydroaeric levels, with an enhanced thickening of pleura, cyst-like formation in the right lung, size of 20mm and multifracture of sternal manubrium, corpus and xiphoid. The patient's condition was rapidly deteriorating, and he was intubated and supported by mechanical ventilation. The patient was transferred to the intensive care unit of the Clinic for pulmonary diseases, KCS, Belgrade.
Bilateral thoracic drainage with the insertion of the thoracic catheter were performed by thoracic surgeon. Culture result of pleural effusion was positive for Streptococcus agalactia initially and Providencia stuarti in the later curse of treatment. During the hospitalization, the patient developed

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an abstinence syndrome, which was treated by a psychiatrist. The patient recovered uneventfully and was discharged from the hospital 7 weeks after admission. A follow-up chest CT scan conducted tree weeks after admission in the hospital showed almost complete absorption of the pleural effusion.
Discussion: Bilateral empyema is an uncommon entity. The incidence of bilateral empyema has been reported to be as low as 0.6%. The Streptococcus agalactia is a gram-positive cocci and is commonly found in the human oropharynx. Although it is not usually implicated as a cause of community-acquired pneumonia, it is most commonly present with Para pneumonic effusion and empyema compared to pneumococcal pneumonia.
Key words: empyema, bilateral empyema, streptoccoccus agalactiae