DRUŠTVO LEKARA URGENTNE MEDICINE SRBIJE
SERBIAN SOCIETY OF EMERGENCY PHYSICIANS
ISSN 2466-2992 (Online)

see journal of emergency and disaster medicine

Southeast European Journal of Emergency and Disaster Medicine

Open Access Journal of Serbian Society of Emergency Physicians
Suppl 1/2023

SERBIAN SOCIETY OF EMERGENCY PHYSICIANS
THE 9h INTERNATIONAL CONGRESS
OF EMERGENCY AND DISASTER MEDICINE

ABSTRACT BOOK

Vlasnik i izdavač/Owner and publisher:
Društvo lekara urgentne medicine Srbije/Serbian Society of Emergency Physicians

Web: www.seejournal.rs
E-mail: seejournal.office@gmail.com

DRUŠTVO LEKARA URGENTNE MEDICINE SRBIJE - SERBIAN SOCIETY OF EMERGENCY PHYSICIANS

KONGRES

Deveti međunarodni kongres Društva lekara urgentne medicine Srbije

THE FUTURE IS OURS

Medicinski fakultet Niš, 13-15. oktobar 2023.

ДРУШТВО ЛЕКАРА
УРГЕНТНЕ МЕДИЦИНЕ СРБИЈЕ

SERBIAN SOCIETY OF
EMERGENCY PHYSICIANS

www.dlums.rs

East Diagnostics · ZDRAVLJE LESKOVAC · AstraZeneca · clarius Ultrasound Anywhere · MIT · ZEM EHO EDUKACIJA

International Centre for Excellence in Emergency Medicine · Универзитетско Клиничком центар Ниш · Медицински факултет Ниш · EUSEM

Southeast European Journal of Emergency and Disaster Medicine
Open Access Journal of Serbian Society of Emergency Physicians
Volumen IX, Supplement 1, ISBN-978-86-919339-7-5

VLASNIK I IZDAVAČ

Društvo lekara urgentne medicine Srbije
Bulevar Nemanjića 19/33,
18000 Niš

Časopis izlazi dva puta godišnje kao Open Access Journal na stranici www.seejournal.rs

Adresa uredništva
seejournal.office@gmail.com
www.seejournal.rs

Southeast European Journal of Emergency and Disaster Medicine
OpenAccess Journal of Serbian Society of Emergency Physicians
Volume IX, Supplement 1, ISBN-978-86-919339-7-5

OWNER AND PUBLISHER

Serbian Society of Emergency Physicians
Bulevar Nemanjića 19/33,
18000 Niš

The journal is published two times a year as an Open Acess Journal on www.seejournal.rs

Editorial adress
seejournal.office@gmail.com
www.seejournal.rs

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX, Year 2023, Suppl. 1

STRATEGIC PARTNER

INTERNATIONAL CENTRE FOR EXCELLENCE IN EMERGENCY MEDICINE

SPONSORS

East Diagnostics

AstraZeneca

MIT

ZDRAVLJE LESKOVAC

clarius Ultrasound Anywhere

ZEM EH EDUKACIJA

SUPPORTED BY

Универзитетско Клинички центар Ниш

Медицински факултет Ниш

Pre Hospital Trauma Life Support NAEMT

EUSEM EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

SERBIAN SOCIETY OF EMERGENCY PHYSICIANS

THE 9th INTERNATIONAL CONGRESS OF EMERGENCY AND DISASTER MEDICINE

2023.

ABSTRACT BOOK

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

INVITED LECTURES

IN-FLIGHT MEDICAL EMERGENCIES - IS THERE A DOCTOR ON BOARD?

Pavlović A, Trpković S, Videnović N, Đukić S.
UNIVERSITY OF PRIŠTINA- KOSOVSKA MITROVICA, MEDICAL FACULTY

Almost 4 billion passengers travel aboard commercial airliners every year. In-flight medical emergencies (IMEs) are common and occur in a complex environment with limited medical resources. The aim of this work is to introduce us to the specific ambient conditions in theaircraft cabinand their influence on the physiologyof the human body, the most common IMEs that occur under the influence of those conditions, and the role of the doctor-passenger.
More recent data shows that IMEs occur in 1 passenger for every 604 flights or 24-130 IMEs for every 1 million passengers, more often in people over 70 years old.
Due to the drop in barometric pressure, there are specific conditions in the aircraft passenger cabin that can affect the occurrence of IMEs. Most importantly it is hypobaric hypoxia, whichcan lead to the development of hypoxia-related symptoms in chronic patients with respiratory, cardiovascular and hematological diseases. With reducedbarometric pressuregases in body cavities and medical equipment can expand by 30%,this can lead to IMEs in recently operated patients (wound dehiscence, bleeding), middle ear and sinus diseases, subocclusions, lung problems (pulmonary bulla). Other factors that contribute to the occurrence of IMEs are limited movement (deep vein thrombosis), dry and cold air (dehydration), jet lag, turbulence, psychological stress. Therefore, there are absolute and relative contraindications for flying by plane, which are described in this paper.
IMEs most commonly involve syncope or near-syncope (32.7%), gastrointestinal (14.8%), respiratory (10.1%) and cardiovascular (7.0%) symptoms. Because of ethical, and in some countries also legal responsibilities, doctor- passengers are a great help in the treatment of IMEs. Emergency landing of the aircraft when an IME occurs happens in an estimated 4.4% of cases.
Knowing the influence of thespecific ambient conditions in the plane on physiological processes in the body is of great importance for determining the absolute and relative contraindications for flying by plane.Doctor-passengers have an important role in the treatmentof IMEs.
Key words: In-flight medical emergencies, doctor on board, aircraft medical kit.

IT HAD TO BE THAT WAY

Nenad Ž. Božinović[1,2], Zoran Perišić[1,2], Svetlana Apostolović[1,2], Tomislav Kostić[1,2], Sonja Dakić [1,2], Milan Živković[1], Bojan Maričić[1], Mihajlo Lazarević[1]
[1]CARDIOLOGY CLINIC, UNIVERSITY CLINICAL CENTER NIŠ; [2]MEDICAL FACULTY,
UNIVERISTY OF NIŠ

A male patient, 62 years old, was admitted to the coronary care unit due to acute coronary syndrome. He received acetylsalicylic acid 300mg, ticagrelor 180mg, and heparin as a standard premedication. The coronary angiogram showed LAD stenosis of 90%, Ramus intermedius with 80% stenosis and subocclusion of RCA, which was a culprit lesion with TIMI 2 flow. During the passage of coronary wire through the tight RCA lession, huge thrombosis occurred, leading to the loss of the vessel. The

patient started being tachycardic and dyspneic with the development of cardiogenic shock. In this scenario, we changed strategy and implanted a stent into LAD to ensure better function of left ventricle. After that, there was a clinical improvement in patient status. The initial procedure was continued, and the RCA was opened with implantation of one drug eluting stent.
The patient was discharged from the hospital in good condition.
After three months procedure was continued and optimized by implantation two stents in LAD, proximally and distally and one stent in ramus intermedius with good angiographic result.
CONCLUSION:Percutaneous treatment of acute coronary syndrome can be challenging in the settings of coronary interventions, complications and clinical status deterioration. Initial strategy might not always be the best one in different scenarios. Operator must be prepared to rapidly change it in order of new circumstances.
Key words: acute coronary syndrome, coronary angiography, stent, thrombosis

UNUSUAL STEMI

Danijela Đorđević Radojković, Gordana Lazarević
CLINIC FOR CARDIOLOGY, UKC NIŠ

Is it preferable to always trust the first impression, when it comes to the diagnosis of acute myocardial infarction with ST segment elevation (STEMI) or not ? A 64-year-old female patient came to the outpatient clinic of the Cardiology clinic of the University Hospital of Niš. In the evening, after heavy physical work during the day, she felt severe pain behind the sternum, of a tightening character, which spread to both arms. It was followed by nausea and vomiting and the loss of consciousness, for which she was examined by the Emergency and, due to ventricular fibrillation, defibrillated twice. Signs of STEMI of the anterior wall of the left ventricle were registered on the admission ECG. The patient states that she suffered a myocardial infarction 7 years ago and that no significant narrowing of the coronary arteries was verified by coronary angiography. She is being treated for high blood pressure, and 20 years ago she was diagnosed with breast cancer, for which she was treated with chemotherapy and radiotherapy. The coronary angiographic findings after admission to the clinic again did not reveal significant narrowing of the coronary arteries, which is why it was assumed that the reason for the hospitalization was an acute myocardial infarction without significant obstruction of the coronary arteries (MINOCA). A normal lipodogram and elevated troponin I values were registered. During hospitalization, a paroxysm of atrial fibrillation was registered and the patient was medically converted to sinus rhythm. Admission cardiac ECHO showed impaired contractility of all apicomedial segments of the left ventricle, however, follow-up cardiac ECHO indicated that contractility of all segments improved within a few days, which is why Takotsubo cardiomyopathy (TCM) was suspected. As there are no official guidelines for the treatment of TCM, therapy was prescribed according to possible pathophysiological mechanisms in TCM. After discharge, the patient was referred for cardiac magnetic resonance imaging (CMRI), which, however, established myocardial edema and late gadolinium accumulation, which actually showed that the real reason for hospitalization was an acute myocardial infarction.
Conclusion: According to the official recommendations of the ESC, in case of suspicion of MINOCA, the cath lab assessment includes the clinical hystory, physical examination, ECG, coronary angiography, intravascular imaging, assess for coronary microvascular dysfunction or vasoreactivity, while ward assessment includes clinical hystory, physical examination, ECG, blood tests, echocardiography, CMRI and CT of the pulmonary arteries or CT of the brain, while post discharge

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

care includes clinical follow-up, repeat echocardiography and repeat CMRI. It turned out that in this case CMRI was the most important diagnostic method for differential diagnosis.

MYOCARDIAL INFARCTION IN ANTIPHOSPHOLIPID SYNDROME

Sonja Dakić[1,2], Zoran Perišić[1,2], Tomislav Kostić[1,2], Svetlana Apostolović[1,2], Danijela Đorđević-Radojković[1,2], Nenad Božinović[1,2], Bojan Maričić[1], Dušanka Kutlešić-Kurtović[1], Jelena Perišić[1]
[1]UNIVERSITY CLINICAL CENTER OF NIŠ, CLINIC FOR CARDIOLOGY, [2]UNEVERSITY OF NIŠ, MEDICAL FACULTY

The term Antiphospholipid Syndrome (AFS) dates back to 1980, which describes a condition in which thrombophilia is induced by autoantibodies. It is characterized by arterial and/or venous thrombosis, multiple and repeated fetal losses, often associated with thrombocytopenia and positive antiphospholipid antibodies (aFL): lupus anticoagulant (LAC), anticardiolipin antibodies (aCL) and anti-ß2GPI antibodies. A definitive diagnosis of AFS requires the presence of at least 1 clinical and 1 laboratory criteria. Clinical criteria may include confirmed venous, arterial, or small vessel thrombosis, or pregnancy disturbances due to changes in the placenta, including spontaneous abortions or preterm birth. Laboratory criteria include persistently positive tests for at least 1 of the three types of antiphospholipid antibodies measured in 2 or more samples 12 weeks apart. That gap of 12 weeks is very important because some infections and drugs can also cause a transient increase in antiphospholipid At. Arterial thrombosis in APS is fairly common and often involve coronary or cerebral arteries leading to myocardial infarction (MI) or stroke. We present a case of recurrent acute myocardial infarction secondary to arterial thromboembolism in a 45-year-old woman antiphospholipid syndrome (APS) Acute myocardial infarction may be the first manifestation of AFS, most commonly seen in younger women. The pathophysiological mechanism of ACS includes coronary thromboembolism/ in-situ thrombus in coronary arteries (younger patients, without FR) or accelerated atherosclerosis. Coronary angiography in AMI may show normal findings on the coronary arteries, without evidence of acute thrombosis, when spontaneous thrombus lysis may be a possible explanation for the findings.. There are different recommended anticoagulation strategies in APS patients according to the presence of thrombosis of arterial or venous origin. Potential difficulties in the treatment may occur based on the clinical scenarios. After the first thrombotic event, patients with AFS require long-term anticoagulant therapy. There is still no complete evidence that the addition of aspirin to OAC in recurrent arterial thrombosis provides a benefit. Recently, the use of NOACs in patients with AFS has increased, but there are contradictory recommendations from different associations.

DEAD ANGLE INFARCTION

Bojan Maričić[1], Zoran Perišić[1,2], Tomislav Kostić[1,2], Nenad Božinović [1,2], Svetlana Apostolović [1,2], Tijana Maričić[3], Sonja Dakić[1,2], Zlatko Mehmedbegović[4,5], Jelena Perišić[1], Mihajlo Bojanović[1], Jelena Milošević[1]
[1]CLINIC FOR CARDIOLOGY, UNIVERSITY CLINICAL CENTER NIŠ, [2]FACULTY OF MEDICINE, UNIVERSITY OF NIŠ, [3]CLINIC FOR ANESTHESIA AND INTENSIVE CARE, UNIVERSITY CLINICAL CENTER NIŠ, [4]CLINIC FOR CARDIOLOGY, UNIVERSITY CLINICAL CENTER OF SERBIA, [5]FACULTY OF MEDICINE, UNIVERSITY OF BELGRADE

While isolated posterior myocardial infarction (IPMI) is relatively rare within the spectrum of acute coronary syndrome (ACS), it often goes unnoticed and undiagnosed, making it one of the frequently missed types of acute myocardial infarction (MI). The absence of the typical ACS pattern, characterized by ST-segment elevation on the standard 12-lead electrocardiogram (ECG), can result in delayed primary percutaneous coronary intervention (PPCI). This delay may be attributed to the fact that IPMI patients frequently exhibit stenosis or occlusion of the left circumflex coronary artery (LCx), which is the dominant vessel in approximately 15% of cases and supplies blood to the posterior part of the left ventricle. Since the standard 12-lead ECG does not directly visualize the posterior myocardium, clinicians should be vigilant in seeking reciprocal changes of ST-segment elevation myocardial infarction (STEMI) in the anteroseptal ECG leads V1-3 when patients present with ischemic symptoms.
Notably, the inclusion of posterior leads V7 to V9 significantly enhances the capability to detect posterior myocardial infarction. When utilizing these posterior leads to diagnose PMI, ST-segment elevation in leads V7 through V9 is defined as an elevation of at least 0.5 mm in two or more of these leads, considering the increased distance between the posterior chest wall and the heart.
Isolated posterior MI (IPMI) remains a frequently overlooked condition, often leading to delayed treatment, which has been associated with poorer outcomes in acute coronary syndromes (ACS).
Keywords: posterior myocardial infarction, posterior leads, acute coronary syndrome

MECHANICAL VENTILATION IN THE EMERGENCY MEDICINE

Trpković S, Pavlović S, Videnović N, Đukić S. Tokić B.
UNIVERSITY OF PRIŠTINA- KOSOVSKA. MITROVICA, MEDICAL FACULTY

Background: Patients intubated in the field need some form of artificial ventilation. This could be manual or mechanical ventilation. Manual ventilation or Bag Valve Mask (BVM) ventilation is unreliable and inconsistent and requires a dedicated provider to continue ventilation. Mechanical ventilation has significant advantages over manual ventilation: it is safe, provides effective airway protection and treatment of respiratory failures. To apply mechanical ventilation, emergency physicians must be familiar with portable ventilators which are usually used in the field. Most of the ventilators used in pre-hospital settings are simple to use. However, as the list of indications for mechanical ventilation is expanding, it is no longer acceptable to apply a single strategy of ventilation for all patients. Selection of a ventilatory strategy is a big challenge for the emergency physician.
Objectives: This article aims to outline basic knowledge and essential skills required to ventilate patients safely and appropriately. We will consider the indications for mechanical ventilation (in patients with normal and with sick lungs), modes of ventilation (when to use mandatory or assisted breathing, when to use volume or pressure targeted ventilation), general ventilator settings (how to set: percent of inspired oxygen - FiO2, respiratory rate, tidal volume -TV, inspiratory: expiratory ratio - I:E, Positive End Expiratory Pressure - PEEP, alarm limits), goals of ventilation (how to set parameters

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

to treat ventilatory and oxygenation failure), adverse effects and complications of mechanical ventilation (how to set parameters to avoid barotrauma, volutrauma and oxygen toxicity) and finally, we will list the criteria for weaning of mechanical ventilation (extubate the patient when he/she is hemodynamically stable, has good oxygenation on FiO2 of 0.4, the condition necessitating ventilation has been reversed and level of consciousness allows spontaneous breathing and adequate protection of the airway).
Conclusion: Mechanically ventilated patients are among the most critically ill patients in the Emergency department. Therefore, emergency physicians should have comprehensive knowledge of mechanical ventilation.
Key words: Mechanical Ventilation, Modes of Ventilation, Ventilator settings, PEEP, Emergency department, Critical care

PULMONARY THROMBOEMBOLISM VS AORTIC DISSECTION

Marko Erak
HUMBER RIVER HOSPITAL, QUEEN'S UNIVERSITY, TORONTO , CANADA

Aortic dissection (AD) and Pulmonary embolism (PE) represent two critical diagnoses for an emergency physician to make in patients presenting with acute chest pain. Both are life threatening and distinguishing between each diagnosis is important because therapies differ. While there may be a role for D-Dimer in the context of a validated score like the aortic dissection detection risk score, AD is commonly diagnosed in the emergency department by computed tomography (CT) with contrast dye in the arterial phase. Treatment targets reduction of aortic intimal wall stress by reducing heart rate (<60bpm) first and then blood pressure (SBP target 100-120mmHg). This is usually achieved with beta blockers like esmolol or labetalol. Agents like hydralazine or nitroprusside should be avoided due to risks of reflex tachycardia. Pain is also an important factor to manage to blunt the resulting sympathomimetic response. PE is diagnosed by a CT scan with contrast dye timed to a different phase than in AD. Clinical features and, if appropriate, blood work help determine if PE can be safely ruled or if there is a need for a CT scan. Clinical probability is estimated with established risk scores such as the Wells or Geneva score. The pulmonary embolism rule out criteria (PERC) score further improves sensitivity and minimize over testing. D-Dimer has an established role in PE and there are validated cut off ranges based on YEARS or age adjusted values. Point of care ultrasound also has an important role in determining right heart strain and therefore the probability of a higher risk of PE. PEs are classified into low, intermediate and high-risk categories. Low risk PEs are treated with anticoagulation. High risk PEs should receive thrombolysis. Intermediate risk PEs have no established guidelines for use of thrombolysis but do require further monitoring and treatment with anticoagulation. There is likely a role for modalities such as catheter assisted thrombolysis.

TISSUE PERFUSION MONITORING-UPDATE

Natalija Vuković
UNIVERSITY CLINICAL CENTER NIS

Different macrocirculatory, metabolic, regional, peripheral, and microcirculatory parameters have been utilized to assess hemodynamics and perfusion.

Loss of perfusion produces a decrease in oxygen delivery to the tissues. The main parameter of tissue hypoxia that is used to follow the change, is lactate. It presents a metabolic product of glucose oxidation to pyruvate, both in aerobic and anaerobic conditions. Lactate importance in hemodynamic monitoring has gained an important base of knowledge. In this way, today it is known that lactate can indicate decreased tissue perfusion when mean arterial pressure may be somewhat below optimal. Also, lactate is rapidly increasing in situations where oxygen uptake becomes dependent on oxygen delivery parameters (hemoglobin, SaO2, and cardiac output). Nevertheless, as lactate is the energy source in the high energy need, it should be analysed through this prizm also.
Mixed oxygen saturation and central venous oxygen saturation are frequently used parameters of hemodynamic analysis. The first is gas parameter driven from the pulmonary artery catheter blood and the former is from vena cava superior blood. Both high and low ScvO2 are connected to increased mortality. These parameters are dependent on the factors that influence both delivery and oxygen consumption. Supranormal values should be interpreted as mitochondrial dysfunction or microcirculatory shanting.
Blood gas analysis from central venous and arterial samples enables the calculation of carbon dioxide the partial pressure difference (dPCO2). An increasing difference between the partial pressure of carbon dioxide indicates a low flow state and reduced cardiac output. Al Duhaliib and al showed in their meta-analysis that there is increased mortality in situations of increased dPCO2.
Capillary refill time (CRT) is a skin perfusion parameter used to assess peripheral perfusion at the bedside. Increased above 3 seconds indicates centralization of circulation. Capillary refill time-guided resuscitation was compared to lactate clearance guided resuscitation strategy showed comparable regional and microcirculation flow parameters but faster obtaining of the resuscitation target.
Another quick, bedside parameter that implies circulation centralization is mottling. Leg skin area mottling has been shown to be a predictor of survival in septic shock.
Due to the fact that during persistent circulatory perfusion dysfunction, hemodynamic and perfusion parameters may differ even in the opposite way, it is important to set a multimodal approach. No single parameter presents all aspects of hemodynamics and perfusion, either one can be used as a single target for the resuscitation.
Keywords: hemodynamic monitoring, lactate, central venous oxygen saturation, tissue perfusion

VASOPRESSORS IN SEPTIC SHOCK

Stojanovic M[1], Jankovic R[1,2], , Cvetanovic V[1]
[1]CLINIC FOR ANESTHESIA AND INTENSIVE THERAPY, UNIVERSITY CLINICAL CENTER NIS, NIS, SERBIA, [2]SCHOOL OF MEDICINE, UNIVERSITY OF NIS, NIS, SERBIA

Sepsis is defined as a dysregulated host response to an infection while septic shock is a consequence of severe sepsis followed by hypotension which is not reversed with fluid resuscitation. These life-threatening conditions, which require urgent treatment, still represent important public health issues and remain one of the leading causes of death worldwide.(1)
As hypovolemia and low systemic vascular resistance are significant risk factors for mortality in sepsis and septic shock(2), one of the elements of global initiative aimed to improve prognosis among patients with septic shock-Surviving Sepsis Campaign (SSC)(3) is to maintenance of Mean Arterial Pressure (MAP) above 65mmHg. Achieving this value and maintaining an adequate tissue perfusion require large amount of resuscitation fluid.(2) The debate about preferable type of fluid still remains a concern, but recent studies suggest against use of hydroxiethil-starches and poor prognosis among patients who were treated with starch solutions and use of crystalloids as fluids of choice.(4)

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

Patients in which target values of MAP are not reachable with fluids, represent the candidates for vasopressor or inotrope therapy.(2) A first line therapy among vasopressors is norepinephrine (potent α-adrenergic agonist and less potent β-adrenergic agonist).(5) The benefits of using norepinephrine are reflected of its ability to increase blood flow through the system of splanchnic circulation and a lower incidence of arrythmias. As a second-line therapy the epinephrine is recommended. In targeting adequate MAP value it should be used alone or with norepinephrine.(6,7,8) A phenylephrine (pure α-agonist) should not be used as may decrease stroke volume, except as a salvage therapy in combination with other vasopressors or inotrope.(2) Vasopressin is recommended in combination with norepinephrine, but not as a single therapy.(9) Recommendations are against use of dopamine for renal protection and should be used in high selected patients.(10) Dobutamin remains the drug of choice for patients with myocardial dysfunction and signs of inadequate tissue perfusion despite achieving adequate MAP.(2)

In conclusion, adequate fluid resuscitation represents fundamental aspect of hemodynamic management in patient with sepsis and septic shock and should be achieved before introducing vasopressors and inotropes in therapy. In the situation of persistent hemodynamic instability, the first-choice among vasopressors is norepinephrine and among inotropes dobutamine. Other vasopressors/inotropes could be used as additional agents in achievement of adequate tissue perfusion.

INTENSIVE MANAGEMENT OF NEUROTRAUMA

Anita Vuković, Radmilo Jankovic
CLINIC FOR ANESTHESIA AND INTENSIVE THERAPY, UNIVERSITY CLINICAL CENTER OF NIS, SERBIA

Neurocritical care is a multidisciplinary field with increasing demands, specifically neurotrauma. Prehospital management is the crucial in patients with severe traumatic brain injury (TBI) by analyzing adherence to recommended target ranges for ventilation and blood pressure and their effect on mortality, as well as quality of prehospital ventilation assessed by arterial partial pressure of CO2 (PaCO2) at hospital admission and end-tidal carbon dioxide (ETCO2). Performing serial neurologic evaluations (GCS + pupil examination, electrocardiogram (ECG), heart rate (HR), peripheral oxygen saturation (SpO2 > 94%). Maintaining systolic arterial pressure (SAP) > 110 mmHg or mean arterial pressure (MAP) > 80 mmHg in severe isolated TBI patients is very important. The principles in the management of neurotrauma include around four major parameters: intracranial pressure, cerebral perfusion pressure, oxygenation, and blood pressure. Tight control of blood pressure and a targeted cerebral perfusion pressure of 60–70 mm Hg has been recommended to improve survival and to optimise conditions for brain recovery. Maintaining hemoglobin (Hb) level > 7 g/dl, Platelet (PLT) count > 75.000/mm3 in all salvageable severe TBI patients at risk of needing neurosurgery (including ICP monitoring), the normal control of prothrombin time (PT)/activated partial thromboplastin time (aPTT) value < 1.5 and reversal of anticoagulant/antiplatelets agent as soon as posible. Avoiding core body temperature > 37.5 °C and to aim for normothermia. Intracranial pressure management was an essential part of modern neurotrauma management as well, as elevated ICP was associated with increased mortality. Levetiracetam is used to prevent posttraumatic seizures and pneumatic compression is used to reduce the risk of venous thromboembolism . Glucocorticoid use did not result in improved outcomes in patients with raised intracranial pressure. Interventions to lower intracranial pressure included intubation, ventilation and oxygenation, sedation and analgesia, osmotic therapy and elevation of the head at 30°–45° to facilitate brain venous drainage. If it was not possible to control the intracranial pressure despite these measures, techniques such as depressive craniectomy,

barbiturate coma, and hypothermia were used .Of note, disrupted cerebral autoregulation and consequently delayed cerebral ischemia are important indicators of poor outcomes in patients with severe neurologic injuries. Triple-H therapy which consists of the triad of hyperventilation, hypertonic saline, and hemodilution to improve brain perfusion is not substantial evidence to support its use; hence, modern practice places more emphasis on maintaining euvolemia and optimizing ICP, CPP, oxygenation, and blood pressure.

HELICOPTER EMERGENCY MEDICAL SERVICE IN SLOVENIJA

Lili Žura, Uroš Lampič
COMMUNITY HEALTH CENTER KRANJ

On the16th July 2023, the Helicopter Emergency Medical Service (HEMS) in Slovenia celebrates 20 years of its existence. It represents an important part of the emergency medical system. In Slovenia, HEMS is provided from two bases. The HEMS unit Brnik is based at Brnik airport, while the HEMS unit Maribor is based at Maribor airport. The basic task of the HEMS, after activation by a medical dispatcher, a doctor from the EMS system, a mountain rescue or a hospital doctor, is to fly to a sick or injured person as quickly as possible with the help of a helicopter, treat the pacient as optimally as possible and transport the pacient to the hospital. The contribution highlights the achievements in the development of HEMS in Slovenia and the challenges in the future.
Introduction. In the twenty years of its operation, the HNMP carried out over 6,000 interventions1,2 from the two bases, where it mostly treated the most severely injured, ill and poisoned. After 3 and a half years of operation as a trial project, 1.12. In 2006, the HNMP unit in Brnik started its regular work, which was joined by the base in Maribor on 15 November 2016. With their work, they cover the entire area of Slovenia and represent an important link in the chain in the treatment of severely injured and suddenly ill patients. Patients from remote and hard-to-reach places benefit the most from HNMP, where classic transport by road would mean a delay in final treatment at the hospital. Regardless of the distance from the HNMP base, helicopter transport is more suitable for the injured with injuries where the condition could worsen due to the adverse effects of road transport. The fact that the quality of treatment and care of the most seriously injured and critically ill patients varies across the country is also not negligible. It is for these patients that the HNMP teams add what is needed for optimal care in the pre-hospital environment in diagnostics and treatment. This reduces differences in the quality of treatment between EMS units.

BRIEF OVERVIEW OF HEMS DEVELOPMENT
As part of the NMP system, started working on July 16, 2003 as part of a pilot project. The organization of the medical work was entrusted to the Primary Health Care of Gorenjska, the transport part was in charge of the Slovenian army with the 15th helicopter battalion. Doctors and paramedics (medical technicians and medical graduates) from the larger units of the Slovenian EMS and GRZS (Mountain Rescue Association of Slovenia) started their work with great enthusiasm and transferred their experience from their basic workplaces (field, hospital) to the environment of helicopter transport. After the completion of the pilot project, it turned out, similar to elsewhere in the world, that the injured, sick and poisoned people benefited significantly from it. It soon became clear that the HEMS service could be more effective for all residents of Slovenia if there was at least one more unit in Maribor, because the only HEMS unit from Brnik cannot come to help quickly enough in the northeastern part of Slovenia. Deficiencies regarding the helicopter carrier were also shown, especially regarding the long-term activation process of non-purpose helicopters that are inadequately equipped for the safe transport of patients. Therefore, in 2006, a private company was chosen as the

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

HEMS carrier, which proved in a month and a half that HNMP can also be implemented in Slovenia according to international standards4. At the same time, there was a serious intention to establish a network of several HEMS units across Slovenia. A proper, dedicated helicopter with a suitable pilot crew, modern medical and winching equipment, adequate communication, safe patient transport and a short activation time was a very short lived but welcome experience. It lasted just so long that in many ways it held up a mirror to the state carriers, the Slovenian Army and the Police. From 13.1. In 2007, according to the decision of the Government of the Republic of Slovenia, the role of helicopter carrier fell back to state aircraft. Until a few years ago, initiatives for systemic solutions in terms of progress in the field of HNMP did not bear fruit. Then, in 2016, the northeastern half of the country finally got the HEMS Maribor unit, and in 2017, the combined HEMS GRZS team started operating from the base in Brnik.

HOW DOES HEMS WORK TODAY?

At the moment, the vast majority of transport is provided by the 151st helicopter squadron of the Slovenian Army in both HEMS bases, and only exceptionally in the Brnik base by the Air Police Unit. 26 members participate in the HEMS Brnik unit, of which 16 are doctors and 10 paramedics perform an average of over 300 interventions annually, of which more than a third of the interventions by the combined HEMS GRZS team are in the mountains, and the share of emergency inter-hospital transports has significantly decreased in recent years and amounts to around 5%. 34 members participate in the HEMS Maribor unit, of which 18 doctors and 16 paramedics perform an average of 140 interventions annually. The indications for activation are broad, as HEMS comes to the aid of teams in the field even if they are busy with several interventions at the same time or several patients are treated during the intervention. Doctors mostly activate it in the case of the most seriously injured or critically ill patients and where not only fast but also considerate transport is important. From October 15, 2022, the activation of HEMS is also possible through the DCZ (dispatch center of health care), where the medical dispatcher can simultaneously activate the HEMS unit with the EMS unit on the basis of dispatch criteria. For the time being, such activation takes place from areas of Slovenia that are already included under the auspices of DCZ operations, and it also means up to 20 minutes shorter time from the event to the patient's arrival at the hospital. Important organizational changes include the start of the joint HEMS GRZS team. Its advantage is that it can quickly intervene and provide high-quality EMS not only where a helicopter landing is possible (HEMS), but also where access to the patient is only possible with the help of a winch or a helicopter landing gear (in mountains and other difficult-to-access areas terrain). The guideline for the creation of such a team was the fact that those who need help in the mountains and other hard-to-reach areas outside of the summer duty of the GRZS helicopter teams in Brnik often wait for it for quite a long time, since the rescue team is assembled from home, and in addition, as a rule, it does not include of a paramedic, which significantly reduces the quality of medical care for the most seriously injured and ill. From the start of operations on 27/04/2017 until 27/04/2023, the combined team carried out 578 interventions in mountains and other difficult-to-access terrains, mostly outside the summer season, and some during it as assistance to the GRZS helicopter team in case of simultaneous interventions.

CONCLUSION

We note that, unfortunately, the HEMS transport sector in Slovenia does not meet modern standards, as the work organization of the current carriers is not adapted to the functioning and needs of modern HEMS implementation. In Slovenia, especially in the last decade, despite this, a certain step was taken in the direction of the development of HEMS, as after several years the Rulebook on the conditions for the implementation of HEMS came into force, which requires the helicopter carrier to meet international standards, and the medical care of patients is also at a high level and fully comparable to services from foreign developed countries. In November 2016, the HEMS base in Maribor started

operating, and in the HEMS Brnik unit, the combined HEMS GRZS team started operating, and with it the possibility of intervention also in mountains and other difficult-to-access terrains, which gives it significantly greater usefulness. The advantage of helicopter transport is faster access to remote places and assistance to local teams and the operation of the unit in emergency situations (floods, earthquakes, landslides).
The Republic of Serbia should also think about establishing such a unit.

POLYTRAUMA: IT IS A DISEASE

Višnja Nesek Adam
UNIVERSITY DEPARTMENT OF ANESTHESIOLOGY, RESUSCITATION AND INTENSIVE CARE, EMERGENCY MEDICINE DEPARTMENT, CLINICAL HOSPITAL SVETI DUH, ZAGREB, CROATIA

Polytrauma is not a disease in the traditional sense but rather a medical term used to describe a condition in which an individual sustains multiple traumatic injuries to different parts of their body as a result of a single, often severe, traumatic event. It is a major cause of morbidity and mortality in both developed and developing countries and remains the leading cause of death and disability in children and young adults. These injuries can vary widely in severity and may involve different systems or organs within the body, which are also associated with physiological compromise and inflammatory response leading to dysfunction and failure of uninjured organs with high risk of complications and mortality.
The management of polytrauma patients is complex and requires a multidisciplinary approach involving emergency medicine, trauma surgery, orthopedics, neurosurgery, and other specialized medical disciplines and demands rapid decision-making, effective teamwork, and adherence to established trauma protocols to optimize outcomes and increase the chances of survival and recovery.
Rapid assessment, resuscitation, nutrition support, infection prevention, pain management, and stabilization of the patient are critical in the early stages to prevent further harm and ensure the best possible outcomes.

PELVIC AND ACETABULAR FRACTURES IN TRAFFIC TRAUMA

Saša Milenković
UNIVERSITY OF NIŠ, FACULTY OF MEDICINE, CLINIC FOR ORTHOPEDICS SURGERY AND TRAUMATOLOGY "ACADEMIC PROF. DR MILORAD MITKOVIĆ", UNIVERSITY CLINICAL CENTER NIŠ

Introduction Pelvic and acetabular fractures represent severe injuries that most often occur in traffic trauma. These injuries occur as isolated, as part of multiple orthopedic trauma or as a part of polytrauma. Patients with these injuries may be hemodynamically stable or unstable due to pelvic bleeding that originates from the presacral venous plexuses.
The goal is to point out the significance of these injuries, especially in polytraumatized patients with life-threatening injuries.
Material and methods The clinical material from the Clinic for Orthopedics Surgery and Traumatology, University Clinical Center Niš was used.
Results In the manuscript, we are presenting the principles of modern treatment of patients with complex injuries of the pelvis and acetabulum, starting with providing the first aid on the field,

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

transportation of the injured to a tertiary health facility, the implementation of urgent diagnostic and therapeutic measures in order to stabilize the general condition of the injured, the application of "damage control" or "early total care" protocole. Also, the complications accompanying these injuries are presented.
Conclusion Pelvic and acetabular fractures, especially in polytrauma, are severe and can be life-threatening injuries. A biomechanically unstable pelvic ring can directly affect and cause hemodynamic instability of the injured patient. Therefore, good cooperation with emergency medical services, emergency medicine and the functioning of the entire health care system are extremely important, because the treatment of these injuries represent a teamwork.

URGENT AND NON-URGENT PATIENTS IN THE CHAIN OF URGENT PATIENT CARE ON A PRE-HOSPITAL AND HOSPITAL LEVEL IN KANTON SARAJEVO

Amra Bašić - Živadinovic, Behka Durak
EMS, SARAJEVO KANTON, SARAJEVO, BOSNIA AND HERZEGOVINA

The aim of this paper is to, through data analysis, confirm the continuous rise of the number of patients in EMS and EDs teams in KS, as well as insist on the need of creating a strategic plan to come up with the best solution to the problem inside of the urgent patient care.

The study is retrospective and descriptive.The data used was from the Analytics and Medicinal informatics department of the EMS of KS, as well as patient protocols from the Urgent centre of the general hospital „Prim. dr. Abdulah Nakaš."
In the year 2021, the number of patients of the EMS was 128.731, and in 2022, 138.296, which suggests a rise of 7,4%. The biggest rise was documented in the Child care Unit, which had a total of 6.914 patients in 2021, while in 2022, with a rise of 28,20%, the recorded number was 8.870. Also worth mentioning is that the on-call interventions have a rise of 8,7%, and the Urgent medicine Unit recorded 6,30%. The total number of patients at the ED of the general hospital „Prim. dr. Abdulah Nakaš" was 32.347 in 2021 (with a total number of 1.936 patients cared for, or 6%, and 168.820 services provided), and 33.759 in 2022 (with a total number of 2.389 patients cared for, or 7,1%, and 177.915 services provided).
The rise of the number of patients was realized with the same number of medicinal professionals and the same amount of financial aid, even though there was an increase in services provided and patients in general. This issue will continue on in the future and cause more problems, which can lead to the weakening of the urgent healthcare chain, potentially leading to a negative ending. Because of this, non-urgent patient care has been delayed, which in turn arose dissatisfaction amongst patients and a higher complaint rate of the EMS and EDS teams.
Through the paper and analysis, I believe we were able to show the significant rise of non-urgent patients and indicate the importance of creating a quality strategic plan. A quality strategic plan is crucial because all patients must have satisfactory care due to their individual needs, in order to minimize the chance of life loss, collective dissatisfaction (healthcare professionals and patients) and similar.
Key words: urgent patients, non-urgent patients, EMS, EDs

ROSC IN SHOCKABLE CARDIAC ARREST, DEPENDING ON THE TIME OF DELIVERY OF THE FIRST DC SHOCK, AT THE PRE-HOSPITAL LEVEL OF CANTON SARAJEVO

Amela Ramadani Podžo
EMS, SARAJEVO KANTON, SARAJEVO, BOSNIA AND HERZEGOVINA

In industrialized countries, sudden cardiac death is the third leading cause of death. Survival following out-of-hospital cardiac arrest is only 10% or less. The only definitive treatment for ventricular fibrillation and ventricular tachycardia remains prompt defibrillation, according to recommendation in ERC guidelines.
Two hundred recent cases of cardiac arrest, were analyzed in the area of Canton Sarajevo, with an initial rhythm of ventricular fibrillation and ventricular tachycardia. One half of the cases resulted in the return of spontaneous circulation, and the other half were declared unsuccessful. The return of spontaneous circulation in cardiac arrest of shockable initial rhythms is directly related to the time of delivery of the first DC shock. The average difference in time to the first defibrillation, between the first and second group is 60 seconds. As in previous experiences, the success rate of witness cardiac arrest resuscitation was recorded in a high percentage, with a fewer attempts of delivered DC shocks.
The data processing method is descriptive.
The objective of this paper is to highlight importance of early defibrillation in prehospital settings and the return of spontaneous circulation in cases of cardiac arrest that are initially presented with ventricular fibrillation and ventricular tachycardia.
Key words: cardiac arrest, ventricular fibrillation, ventricular tachycardia, time to defibrillation, ROSC.

PHYSICAL INJURIES IN CHILDREN RELATED TO ABUSE OR NEGLECT

Dragoljub Živanović[1,2], Vesna Marjanović[1,3], Ivona Đorđević[1,2], Danijela Đerić[2], Nikola Bojović[1,2], Maja Zečević[1,2]
[1]UNIVERSITY OF NIŠ, FACULTY OF MEDICINE, [2]UNIVERSITY CLINICAL CENTER NIŠ, CLINIC FOR PEDIATRIC SURGERY AND ORTHOPEDICS

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

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

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 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

ABDOMINAL COMPARTMENT SYNDROME IN CHILDREN

Marjanović V,[1,2], Budić I,[1,2], Živanović D, [2,3], Stošić M, [2,4], Perić V, [2,4], Stević M, [5,6], Simić D [5,6]
[1]CLINIC FOR ANESTHESIOLOGY AND INTENSIVE CARE, UNIVERSITY CLINICAL CENTRE NIŠ, SERBIA, [2]MEDICAL FACULTY, UNIVERSITY OF NIŠ, SERBIA, [3]CLINIC FOR CHILDREN'S SURGERY, UNIVERSITY CLINICAL CENTRE NIŠ, SERBIA
[4]CLINIC FOR CARDIAC SURGERY, UNIVERSITY CLINICAL CENTRE NIŠ, SERBIA, [5]UNIVERSITY CHILDREN'S HOSPITAL, BELGRADE, SERBIA, [6]MEDICAL FACULTY, UNIVERSITY OF BELGRADE, SERBIA

Abdominal compartment syndrome (ACS) is a serious clinical condition with high mortality, especially in children. If the increase in intra-abdominal pressure and ACS is recognized on time and treated early, the outcome may be improved. The list of conditions accompanied with the rise of intra-abdominal pressure include: reduced compliance of the abdominal wall, increased intraluminal and extraluminal contents of the abdomen, as well as increased capillary permeability or excessive fluid replacement in children. Increased intra-abdominal pressure is most often manifested by abdominal distension, which impairs respiratory function, accompanied by refractory hypotension, oliguria and/or anuria. For accurate diagnosis of ACS, the increased abdominal pressure should be confirmed, most commonly using intravesical measurement technique. Immediately after intra-abdominal hypertension (IAH) has been proven, procedures for improving abdominal compliance, fluid replacement optimization, evacuation of intraluminal and peritoneal contents in children, should be initiated. In case of lack of response, surgical treatment should be undertaken, using paracentesis, percutaneous peritoneal drainage and decompressive laparotomy. These procedures can significantly reduce IAH, improve the function of organ systems and patient survival. In conclusion, early detection of increased intra-abdominal pressure and ACS and prompt reaction may mitigate further development of ACS in children and improve overall outcome.
Key words: Intraabdominal hypertension, abdominal compartment syndrome, children

PARTICIPANT'S ABSTRACTS

A MAN WITH AN ATYPICAL PRESENTATION OF ABDOMINAL AORTIC RUPTURE-CASE REPORT

Stefana Đorđević
EMERGENCY MEDICAL SERVICE NIŠ, SERBIA

Introduction: Aortic rupture is when all the layers of the aorta wall tear, causing blood to leak out from the aorta often due to a large aortic aneurysm that bursts. Predisposing factors are older age, male gender, systolic and diastolic hypertension, history of current or past cigarette smoking, and first-degree relatives with a history of AAA. Abdominal aortic aneurysms are commonly found in men aged 65-85 years.The incidence in the male population rose from 4.7/100,000 for those in the fifth decade to 184.8/100,000 for those above 80.
Case report: On 04.08.2023. at 10:15 p.m., the team of the Niš Emergency Medical Service received a call from the third line of emergency, where the family stated that the patient had chest pains. The patient is a 64-year-old man, extremely pale, sweaty, breathing rapidly, complains of abdominal pain radiating to the chest. The pains started two hours ago. He has been having pain in his lower legs for a month. He denies other diseases and denies the use of drugs.At the time of the medical examination, blood pressure was unmeasurable in both arms; SpO2: 78%; respiration rate: 22/min; heart rate: 115/min; glucose: 7,2 mmol/l, body temperature 36,2 °C. Head and neck of normal configuration. Thorax respiratory movable, cylindrical. Pulmo: weakened respiratory murmur on the left basal. Cor: action of the heart is rhythmic, tones are clear, no murmurs. Abdomen above the level of the chest, soft on palpation, easily painfully sensitive in the left hypochondrium. Extremities with varicose veins, without edema and deformity. ECG: sinus tachycardia, sf 115/min, without ST/T and QRS changes.Therapy: i.v. line, Sol: NaCl 0,9% 500 ml i.v. and O2 10 l/min. The patient was transported to Cardiology, where an emergency ultrasound was performed and abdominal aortic dissection was suspected. Then the patient was taken to the intensive care unit of the Emergency clinical center in Niš, where abdominal MSCT and blood sampling were performed as additional diagnostics. Abdominal MSCT: rupture of the lateral wall of the infrarenal aneurysm of the abdominal aorta.Urgent surgical intervention was indicated. Eleven days after the surgery, the patient died.
Discussion: Ruptured abdominal aortic aneurysms have an alarmingly high mortality rate that often exceeds 50%, even when patients survive long enough to be transported to hospitals. Historical data have shown that ruptures are especially likely to occur with aneurysms measuring ≥6 cm in diameter. In the first moment, based on vital parameters, clinical picture and medical history, everything pointed to PTE. All this indicates that rupture of the abdominal aorta can imitate many other diseases and conditions, and some of them are: acute cholecystitis, gastrointestinal bleeding, perforated peptic ulcer, ischemic bowel, nephrolithiasis, pyelonephritis, appendicitis, cholelithiasis, pancreatitis, etc.
Conclusion: In the case of abdominal and chest pain with a sudden circulatory disorder, a rupture of the aorta should be suspected.
Keywords: abdominal aortic rupture, abdominal pain, PTE

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

ACCIDENT WITH A HIGH NUMBER OF INJURIES – CASE REPORT

Ivana Andrić
HEALTH CENTER ZAJEČAR, EMERGENCY DEPARTMENT

On July 4, around 10 p.m., the Emergency Department Zaječar received information that a traffic accident had occurred with a large number of injured. According to preliminary information, it was a bus carrying migrants illegally, which overturned in hard-to-reach terrain, fleeing police patrols.
Having received this information, the staff informed the head of Emrgency Department, who, according to the emergency plan, informed the heads of the Health Center about the situation. Two surgical, anesthesiological and orthopedic teams were provided immediately, as well as 2 teams of radiologists. Since it was the late evening hours, there were no active operations at the time, and all operating rooms were on standby.
In front of the entrance to the hospital building, on the ramp for the ambulances access , a primary triage place was organized, led by an emergency medicine specialist. The place for the secondary examination is organized in the hospital building itself, along the corridor of the emergency center. From all departments of the hospital, mobile stretchers were prepared for the initial reception of the injured as well as infusion racks, which were arranged along the corridor. The police team was engaged in regulating the reception of ambulances and their movement within the hospital corridor, in order to avoid delays in the reception of injured. Also, the admission of all other patients was temporarily postponed (with a plan to admit only high urgency level patients)
The injured migrants were brought in on several ambulances accompanied by a police patrol, which also secured the hospital building itself. Although the first information was about ten injured, seven of them were brought in, while (according to police officers) two or three migrants fled the scene of the accident, and search measures were taken for them.
Of the seven injured, there were five adult men and two underage boys, ages 9 and 12.
Due to the language barrier (very poor knowledge of English and no knowledge of Serbian language) patients were initially numbered 1-7, thus marking and passing through the entire hospital system.
After primary and secondary triage, determination of vital parameters and necessary treatment of injuries, diagnostic procedures were started, after which all injured were kept for observation during the night. One injured person was marked as a patient of the first level of urgency (head and chest injuries), two were marked as second level of urgency (sprains, fractures, superficial injuries), while the remaining four were marked as patients of the third degree of urgency (superficial injuries or no injuries at all). The next day, the patient who was initially marked as a “red” patient, was sent for additional diagnostic procedures (CT, neurosurgeon examination) to the UCC Niš.
Conclusion. Accidents with more injuries are not a rare case these days. Solving such a situation is a good example of cooperation at the primary and secondary levels of health care – timely information about an accident with a large number of injured has enabled the hospital staff to adequately prepare for the reception and treatment of injured, which in reality happened. Also, it should be noted the significant contribution of police officers who helped the hospital staff in an adequate and professional manner.

ANESTHESIOLOGICAL TREATMENT OF ABDOMINAL TRAUMA

Marija Stošić,[1] Mlađan Golubović[1], Velimir Perić[1] Ivana Budić[2], Biljana Stošić[2], Jelena Živadinović[2], Vesna Marjanović[2]

[1]FACULTY OF MEDICINE UNIVERSITY OF NIŠ, CLINIC FOR CARDIAC SURGERY UNIVERSITY CLINICAL CENTER NIŠ, [2]FACULTY OF MEDICINE UNIVERSITY OF NIŠ, CLINIC FOR ANESTHESIOLOGY AND INTENSIVE CARE UNIVERSITY CLINICAL CENTER NIŠ;

Introduction: Trauma is one of the most significant problems of the modern world. The abdomen is often exposed to trauma and is the largest area for post-traumatic bleeding. Therefore, patients with acute abdominal trauma often undergo exploratory laparotomy.

Mwthods:

Discussion: Rupture of the spleen and liver are the most common injuries in blunt trauma, while in penetrating trauma, hollow organ injuries are more common.The most frequently used objective techniques for evaluating abdominal injury are: ultrasonography (US) and Focused Abdominal Sonography in Trauma (FAST), computed tomography (CT), magnetic resonance (MR), diagnostic abdominal paracentesis (DAP) - abdominocentesis and diagnostic peritoneal lavage (DPL), diagnostic exploratory laparoscopy and exploratory laparotomy.The first step in the management of patients with severe abdominal trauma is a detailed physical examination. As long as the blood pressure can be maintained within satisfactory limits, the necessary diagnostic procedures can be carried out. When this is not the case, the patient undergoes immediate surgical intervention. The most common reason for this is uncontrolled bleeding, which must be treated surgically. The surgeon should choose minimally invasive diagnostic and surgical procedures whenever possible. The second period is the period of stabilization and includes stabilization of hemodynamics, adequate oxygenation, restitution of renal function and prevention and treatment of coagulation disorders. Combating shock remains the first priority during this period. The third period is the period of delayed surgical interventions.The availability of objective diagnostic techniques to clinicians has made the management of patients with abdominal trauma much safer. In patients with severe abdominal trauma, associated with significant intra-abdominal hemorrhage and hypotension, rapid induction should be considered, with a fully prepared surgical team to make the incision. Anesthetics that provide the best hemodynamic stability should be used.Establishing or confirming a secure airway is the anesthesiologist's first priority. Rapid sequence induction and crash intubation are generally indicated. Provide also venous line. At least two large peripheral venous lines must be established and secured. It is most preferable to provide cannulation into the venous system of the superior vena cava. In patients with significant abdominal trauma, the venous system of the saphenous vein or the femoral vein should be avoided. The usefulness of a catheter placed in the inferior vena cava system may be compromised if the inferior vena cava must be clamped during surgery. However, in extremely difficult patients, success is to provide venous access wherever possible. In addition, placement of a central venous catheter in the internal jugular vein is useful, both for volume replacement and for monitoring central venous pressure.

Key words: trauma, blunt injury, penetrating injury, anesthetic treatment

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

ARTIFICIAL INTELLIGENCE IN EMERGENCY MEDICINE

Dimitrije Pančić[1], Aleksandra Antović[1,2], Milica Miljković[1], Bogdan Pinterović[1], Marija Nikolić[1], Goran Ilić[1,2], Miodrag Zdravković[1,2]
[1]INSTITUTE OF FORENSIC MEDICINE NIŠ, [2]UNIVERSITY OF NIŠ, FACULTY OF MEDICINE

Introduction: The progressive development of technology, as a civilizational achievement of the modern era, has also led to advancements in the creation and implementation of innovative methods in healthcare, among which the application of artificial intelligence (AI) stands out as a distinct entity in medical science.
Method: AI is based on developing and creating software systems that mimic human intelligence with the ability to perform higher integrative functions in problem-solving and learning. Artificial intelligence finds applications in medical research and clinical practice as a supporting tool for detecting the most optimal medical treatment model and enhancing the quality of healthcare services.
Results: Combined with machine learning, which automatically uncovers patterns within the given parameters processed by the software without explicit programming, AI in emergency medicine can have broad use. It includes triage, selection of diagnostic procedures, treatment methods, therapy choices, optimal time spent in the hospital, disease prognosis, outcomes, as well as risk prediction, reducing medical errors, and improving staff productivity.
Discussion: There are certain limitations to using AI, primarily related to the security of confidential data, the potential for system failures, and the absence of human oversight. Despite that, AI will become an integral part of clinical practice in the future, thereby significantly reducing the number of required healthcare professionals. Regardless of the major potential of AI to provide precise and rapid assistance in diagnosing and analyzing data, such tools also carry a substantial risk due to the limitations and often overestimated capabilities of machines. It ultimately necessitates the presence of the human factor as an indispensable form of control over the operation of devices, equipment, and software, which highlights that the human factor is crucial in healthcare decision-making processes. In the context of the previous, direct contact with the patient and clinical examination is the "gold standard" in medical treatment.
Keywords: Artificial intelligence, machine learning, emergency medicine

CLINICAL SIGNIFICANCE OF PROCALCITONIN AND INTERLEUKIN-6 SERUM LEVELS IN PREOPERATIVE DIAGNOSIS IN PATIENTS WITH ACUTE APPENDICITIS

Svetlana Jovanović[1], Saša Dimić[2], Ljubiša Rančić[1], Hristina Jovanović[3], Anja Vrućinić[1], Marko Vučić[1], Miodrag Đorđević[1]
1 UNIVERSITY CLINICAL CENTER NIŠ, 2CLINIC AND HOSPITAL CENTRE KOSOVSKA MITROVICA; 3 FACULTY OF MEDICINE, UNIVERSITY OF NIŠ;

Introduction: Acute appendicitis (AA) is the most common emergency surgical intervention. In recent decades, enormous efforts have been made to reduce the rate of negative laparotomy, which reaches a frequency of up to 42%, due to often unclear symptoms. Timely diagnosis of AA is also important because of its rapid progression to perforation, resulting in high rates of complications. The aim of this study is to examine the diagnostic values of procalcitonin and IL-6 and their association with the severity of the disease in Patients with AA.
Methods: The prospective study with suspected AA included 67 patients. Measurement of serum levels of PCT and IL-6 was done preoperatively. Based on PH analysis of resected appendixes,

patients were divided into 4 groups: those with catarrhal AA (CtAA) and uncomplicated phlegmonous AA (FAA) were classified into the group of uncomplicated AA. The third and fourth groups consisted of patients with complicated AA (CoAA - gangrenous and gangrenous - perforative). The values of Alvarado score (AS) ≥ 9 and PH findings were used to measure the final diagnosis of AA. For statistical testing, the SPSS 16.0 software package was used.
Results: The highest number of respondents (23.88%) had AS 8th, and the average value of AS was 7.94 ◎ 1.82, with a median of 8.00. Values of AS 9 and AS 10 were safe indicators for appendectomy. Serum PCT levels have been observed to differ significantly in patients with AS≥9 from those with As < 9 because patients with AS ≥ 9 had significantly higher PCT values (p 0.001). There was also a significant difference in IL-6 values (p 0.001), with IL-6 values ≥ 5.9 pg/ml in 100% of patients with AS ≥ 9. The values of AS ≥ 9 are statistically significantly higher in CoAA compared to CtAA (p<0,001) and FAA (p<0.01), and this phenomenon is significantly more common in the FAA than in CtAA(p<0.05). It has been observed that the representation of AS, PCT, and IL-6 above the reference values is the highest in CoAA and the lowest in CtAA. Comparing the values of the tested parameters between groups with pH finding AA, we noticed that AS ≥ 9 is significantly more represented in CoAA than in FAA and CtAA (p<0.001). Univariate regression analysis showed that the PCT finding increased the occurrence of CoAA by 9.20 times (2.84 to 29.77; p<0.001). It has also been shown that PCT values ≥ 0.5 increase the likelihood of complicated AA (CoAA) occurring by as much as 26.84 times (3.30 to 218.55; p<0.01), and AS values ≥ 9, by 24.67 times (4.94 to 123.12; p<0.001).
Discussion: The values of PCT and IL-6 serum in AA patients are associated with the severity of the disease. The increase in serum PCT levels and the values of AS significantly affect the increase in the incidence of CoAA. Our study suggests that parallel PCT, IL-6, and AS measurements can improve diagnosis accuracy, reduce unnecessary negative appendectomies, and predict the negative consequences of the evolution of AA in CoAA.
Key words: acute appendicitis, procalcitonin, interleukin-6, Alvarado score

EMERGENCY SEVERITY INDEX (ESI) TRIAGE ALGORITHM

Marija Marinković
UNIVERSITY CLINICAL CENTER NIŠ

Introduction: The history of the emergency triage originated in the military for field doctors. As early as the 18th century, French military surgeon Baron Dominique Jean Larrey, the chief surgeon in Napoleon Bonaparte's imperial guard, developed a system based on the need to evaluate and categorize wounded soldiers quickly during battle. Many years after, the triage system was first implemented in hospitals in 1964 when Weinerman et al. published a systematic interpretation of civilian emergency departments using triage. There are various triage systems implemented around the world, but the universal goal of triage is to supply effective and prioritized care to patients while optimizing resource usage and timing.[1][2][3]
Data source and selection of materials: Retrospective analysis of literature with settings: Triage, Emergency Nurse, triage scores. Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the library.
Results of synthesis: Triage is one of the main tasks for emergency nurse. Emergency Severity Index (ESI) Triage Algorithm is the most using index in USA. The first question in the ESI triage algorithm for triage nurses asks whether "the patient requires immediate life-saving interventions" or simply "is the patient dying?" The nurse determines this by looking to see if the patient has a patent airway, is the patient breathing, and does the patient have a pulse. The nurse evaluates the patient, checking pulse, rhythm, rate, and airway patency. Is there concern for inadequate oxygenation? Is this person

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

hemodynamically stable? Does the patient need any immediate medication or interventions to replace volume or blood loss? Does this patient have pulselessness, apnea, severe respiratory distress, oxygen saturation below 90, acute mental status changes, or unresponsiveness? If the nurse can accurately diagnose the patient with these criteria and mark as a Level 1 trauma patient, the patient will need immediate life-saving therapy. Immediate physician involvement in the care of the patient is critical and is one of the differences between level 1 and level 2 patient designations. Another scale used by nurses in the assessment is if the patient is meeting criteria for a true level 1 trauma is the AVPU (alert, verbal, pain, unresponsive) scale. The scale is used to evaluate if the patient had a recent or sudden change in the level of consciousness and needs immediate intervention. Patients who are only responsive to painful stimuli (P) or unresponsive (U) are categorized as level 1. If the patient is not categorized as a level 1, the nurse then decides if the patients should wait or not. This is determined by three questions; is the patient in a high-risk situation, confused, lethargic, or disoriented? Or is the patient in severe pain or distress? The high-risk patient is one who could easily deteriorate, one who could have a threat to life, limb, or organ. This is where the experience of the nurse comes into play. The clinical experience of the nurse allows for pinpointing the unusual presentations of diseases that may progress with rapid deterioration. Differentiating between levels 3,4, and 5 are determined by how many hospital resources the patient will most likely need. If the patient requires two or more hospital resources, the patient is triaged as a level 3. If the patient needs one hospital resource, the patient would be labeled a 4. If the patient does not need any hospital resources, the patient would be labeled a 5. One aspect of ESI that may differ at various institutions is what they consider an ESI resource. ESI triage resource examples are laboratory tests, electrocardiograms, radiographic imaging, parenteral or nebulizer medications, consultations, simple procedures such as a laceration repair, or a complex procedure. Resources qualified as "not resources" by ESI is history and physical examination (including pelvic exams), peripheral intravenous access placement, oral medications, immunizations, prescription refills, phone calls to outside physicians, simple wound care, crutches, splints, or slings. Whether or not some emergency departments (EDs) send certain tests such as a urinalysis or pregnancy test to the laboratory would change the ESI level between a 4 and a 5. Regardless, ESI is a simple and effective way for nurses to assess patient needs.
Conclusion: Potential benefits of Emergency Nurse triage are: earlier assessment and treatment, and discharge of some patients without referral to a medical practitioner, reduction in waiting time to treatment for patients in certain categories, earlier initiation of diagnostic measures
earlier referral of patients to other health professionals, if appropriate
Keywords: triage, Emergency Severity index.

FORENSIC SIGNIFICANCE OF IATROGENIC INJURIES AT EMERGENCY DEPARTMENT UNITS

Milica Miljković[1], Aleksandra Antović[1,2], Dimitrije Pančić[1], Marija Nikolić[1], Bogdan Pinterović[1], Goran Ilić[1,2], Miodrag Zdravković[1,2]
[1]INSTITUTE OF FORENSIC MEDICINE NIŠ, [2]UNIVERSITY OF NIS, FACULTY OF MEDICINE, NIŠ

Introduction: Emphasizing adequacy and omissions in medical treatment in the context of the medicolegal expertise and responsibility of physicians has great significance in everyday practice.
Method: Iatrogenic injuries, regarding the state and vital parameters of the patient, can vary from light injuries to severe damage to vital organs and even become the leading cause of death. During the forensic autopsy, we found many injuries, including damage to the oropharynx and trachea caused by

intubation, as well as serious injuries like broken ribs and sternum, ruptured liver, pneumothorax, pneumomediastinum, and pneumoperitoneum caused by CPR
Results: According to the Health care law of the Republic of Serbia, a forensic autopsy must be performed if death occurs during an invasive medical procedure. Some invasive procedures (thoracic drainage, coronary angiography, insertion of the central venous catheter, etc.) can be hard or almost impossible to perform without causing injuries because of the life-threatening condition of the patient or their lack of cooperation and upset state. Thus, medical staff is inevitably in the very delicate position of making decisions regarding the risks and benefits of urgent procedures in emergency department units.
Discussion:Analysis and evaluation of iatrogenic injuries, especially those detected during forensic autopsy, are essential for medical and legal practice. In certain circumstances, iatrogenic injuries do not always and apodictically implicate the responsibility of physicians.
Key words: medicolegal, emergency medicine, legal responsibility

FORENSIC EMERGENCY MEDICINE

Aleksandra Antović[1], Goran Ilić[1,2], Miodrag Zdravković[1,2], Dimitrije Pančić[1], Milica Miljković[1], Marija Nikolić[1], Bogdan Pinterović[1]
[1]INSTITUTE OF FORENSIC MEDICINE, NIŠ, SERBIA, [2]UNIVERSITY OF NIŠ - FACULTY OF MEDICINE

Introduction: Forensic emergency medicine represents applying clinical forensic medical knowledge and skills necessary for emergency department patients, emphasizing that many traumatized patients are victims of violence. Clinical forensic medicine includes all healthcare fields related to legal, judicial, and law enforcement by applying clinical forensic techniques and procedures to live patients of injury, violence, and other crimes.
Methods: In contemporary practice, emergency physicians need to possess the essential knowledge and practice experience necessary for adequately collecting and preserving traces of evidence in cases involving victims or perpetrators of gunshot or stab wounds, sexual assaults in both pediatric and adult populations (including drug-facilitated cases), domestic violence, intimate partner violence, child and elder abuse, neglect, and various other criminal acts.
Results: Following the domestic legal provisions outlined in the Criminal Procedure Code of the Republic of Serbia, the physician must preserve the traces of evidence related to a criminal act. As stated in the Code, during an investigation, the relevant authority conducting the legal process needs to seek professional assistance from experts in fields such as forensics, medicine, traffic analysis, or other areas. These experts are responsible for locating, securing, or describing any traces of evidence, as well as collecting samples for further analysis
Discussion: Emergency medicine physicians (as the medical practitioners who initially contact the patient) must collect traces of criminal acts, mostly without forensic medicine specialists. Nevertheless, the importance of this duty may sometimes be overlooked due to the primary focus on providing critical medical care to patients. It potentially results in the unintentional loss or misplacement of crucial traces and, therefore, entails the legal responsibility of the medical staff.
This article offers an in-depth review of the existing standards and legislation that regulate evidence collection in emergency departments, particularly in providing medical care for individuals involved in different criminal offenses.
Keywords: clinical forensic medicine, emergency medicine

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

HEAD TRAUMA – A CASE REPORT

Miljana Dinić
EMERGENCY MEDICAL SERVICE NIŠ

Introduction: Traumatic brain injury is one of the most common traumatic injuries. In the United States, there are 1.4 million cases of traumatic brain injury reported every year. Mortality among adults is 25-33%. In Europe, head injuries are the leading cause of death, with an incidence ranging from 235-262 cases per 100,000 population. The most common causes include motor vehicle accidents, bicycle accidents, pedestrian accidents, falls, sports activities, and assaults.
Case report: On September 14, 2023, the Emergency Medical Team received a call at 08:33 for a pedestrian collision as a top-priority emergency. On the scene, at 08:34, the team found a 54-year-old female conscious and sitting at a pedestrian crossing. The patient was conscious, oriented, able to reconstruct the event, and mentioned falling on her right side and hitting her head on the concrete. She did not lose consciousness, vomit, and denied nausea. Vital signs at the time of examination: Blood Pressure: 125/75mmHg; Heart Rate: 66/min; Respiratory Rate: 18/min; SpO2: 98%. Clinical examination revealed bleeding from the right ear without visible injuries or hematoma. The neck was cylindrical without swelling or deformities. The chest moved bilaterally with normal respiratory function and no deformities. Lung auscultation was normal. Cardiac action was rhythmic with clear sounds. Neurological examination was unremarkable. A cervical collar was applied, and the patient was transported to the neurosurgery department for further diagnosis. Vital signs remained stable during transport. However, in the intensive care unit, the patient became agitated and non-compliant, leading to sedation with Dormicum 5mg. A CT scan revealed two fractures in the right occipital bone, an extensive fracture in the right temporoparietal area approximately 10cm in length, involving the internal and external ear canals, a fracture of the right wing of the sphenoid bone, and a sphenoidal sinus filled with hemorrhagic content. Signs of subarachnoid hemorrhage (SAH) were present in the right temporoparietal sulci, along with signs of pneumocephalus. Dual antibiotic, anti-edema, anticonvulsant, and analgesic therapy were prescribed. After 24 hours, there was progression in the initial findings, and the patient underwent surgical treatment. Postoperatively, there was an improvement in the overall condition, complete recovery of consciousness, and regression of neurological deficits.
Discussion: In cases of trauma caused by motor vehicle accidents, such as pedestrian collisions, special attention should be given to head trauma and signs that may indicate traumatic brain injury. Timely response, diagnosis, and therapy can prevent complications associated with traumatic brain injury.

Conclusion: Traffic accidents are the most common cause of polytrauma, with head trauma, including traumatic brain injury, occurring in a significant number of cases, often alongside skull fractures.
Keywords: head trauma, brain injury, traffic accident

IMPORTANCE OF FORENSIC AUTOPSY OF NEWBORN INFANTS WITH CONGENITAL TRACHEAL MALFORMATION

Marija Nikolić[1], Bogdan Pinterović[1], Aleksandra Antović[1,2], Goran Ilić[1,2], MiodragZdravković[1,2] Milica Miljković[1], Dimitrije Pančić[1]
[1]INSTITUTE OF FORENSIC MEDICINE, NIŠ, SERBIA, [2]UNIVERSITY OF NIŠ - FACULTY OF MEDICINE

Introduction: Forensic autopsy of newborn infants with congenital malformations not detected during pregnancy mostly excludes the responsibility of doctors and other healthcare workers for any negligence in providing medical assistance.
Method: We present a case of a live-born newborn with asphyxia and unsuccessful intubation. The newborn was transferred from a regional to a tertiary healthcare facility, where an urgent tracheostomy and placement of a tracheal tube were attempted, accompanied by resistance at the level of the trachea. During the intervention, there was a decrease in heart rate and oxygen saturation in the blood, and vigorous manual and medicamentous cardiopulmonary resuscitation with mechanical ventilation proved unsuccessful. Due to an unknown cause of death and suspicion of medical negligence, a forensic autopsy was requested.
Results: A forensic autopsy revealed the presence of tracheal atresia type 1, characterized by the absence of a significant part of the trachea. In the proximal segment, there was a pouch-like cartilaginous formation the size of an almond, and in the distal part, a final segment of the trachea measuring 10 mm in length, from which both main bronchi originated. The final segment of the trachea and both main bronchi communicate with the esophagus via a tracheoesophageal fistula. After birth, breathing was briefly established through the fistula between the lower third of the esophagus and the existing short final segment of the trachea, but soon, breathing and heart function ceased, as this congenital anatomical-morphological malformation is incompatible with life.
Discussion: Congenital tracheal atresia is a rare anomaly with nearly 100% mortality. This congenital anomaly is rarely detected in prenatal diagnostics, so a forensic autopsy is necessary for a definitive diagnosis. Emergency medicine physicians should consider the possibility of similar anomalies during the unsuccessful emergency care of newborns. Therefore, it is essential to document and describe in detail the intubation procedure and other medical procedures carried out in the medical records, along with the mandatory request for a forensic autopsy, as autopsy findings release doctors from professional liability for any adverse health consequences to the newborn.
Key words: forensic autopsy, tracheal atresia, tracheoesophageal fistula

INTRACEREBRAL HEMORRHAGE – CASE REPORT

Milan Đokić
EMERGENCY MEDICAL SERVICE NIŠ

Introduction: Intracerebral bleeding (hemorrhage) - ICH is the result of damage to small penetrating blood vessels, which cause lacunae when occluded. Changes that precede hemorrhage consist of weakening of the wall and formation of microaneurysms that rupture. Arterial blood exits from the ruptured blood vessel under pressure and destroys the brain tissue creating an intracerebral hematoma. The sudden outflow of blood from the blood vessel leads to an increase in intracranial pressure, which also contributes to the formation of perifocal edema.
Case report: 53-year-old female patient complains only of headache and nausea. Cousens state that the complaints started two days before, presented as visual hallucinations, the patient became sluggish,

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

but was able to move until the night before the (around 2:30 a.m.) when she went to the bathroom. On the day of the examination, around 10:00 am, patient's sister finds her in the bathroom, on the toilet seat, without underwear, with poor verbal communication and with weaker movements of her left extremities. During the examination, we found that the patient is dysarthric, slowed down, has repetitive movements of her right hand as if she is trying to pull on her underwear, but she cannot, nor can she get up from the toilet. By checking other parameters, we determine that blood pressure was 210/120 mmHg, blood glucose was 21 mmol/l. Neurological examination revealed bulbar deviation to the right side and left dissociated hemiparesis. Due to all the symptoms present during the examination, we decide for an urgent transport to the Emergency Center – Neurology with suspicion of intracranial hemorrhage. We gave her hypertensive therapy and monitored all the time during transport. There, the patient was referred for MSCT of the brain with angiography, which indicated an intracerebral hematoma and a zone of intracerebral microhemorrhage in the supratentorial brain parenchyma, peripheral, subcortical localization. She was also examined by a neurosurgeon who did not indicate surgical treatment, and the patient was admitted to the ICU of the Neurology clinic.

Discussion: A typical patient with cerebral hemorrhage usually is an obese hypertensive, and the typical situation in which hemorrhage occurs is effort, even during defecation, which was the case with our patient. The stroke occurs suddenly, hemiparesis or hemiplegia develops and, as a rule, headache and vomiting occur. Vomiting is almost pathognomonic for cerebral hemorrhage. The location and size of the hematoma are of primary importance for the clinical manifestation and prognosis. The diagnosis is made on the basis of the clinical picture, neurological examination, fundus examination, laboratory findings, CT and NMR.

Conclusion: An immediate reaction and transport is necessary, stabilization of the patient and resuscitation, when necessary. Definitive treatment of hematoma is surgical, and the prognosis depends on other damages. In some cases, some hematomas do not grow but resorb spontaneously and there is no need for surgical intervention.

Key words: Intracranial hemorrhage, ICH, CVI, neurology, therapy, suspicion

INTRAHOSPITAL TRANSPORT OF CRITICALLY ILL PATIENTS

Nela Veljković, Petar Petković
EMERGENCY CENTRE, UNIVERSITY CLINICAL CENTRE NIŠ

Introduction: The decision to transport a critically ill patient within a hospital is based on an assessment of the potential benefits of transport. Critically ill patients are transported to alternate locations to obtain diagnostic procedures or additional care that is not available at the existing location.

Data source and selection of materials: Retrospective analysis of literature with settings: Intrahospital transport, critically ill patients transport, monitoring during transport of critically ill. Searching is done through: PubMed, Medline and electronic journals accessible via KoBSON as well literature available in the library.

Results of synthesis: Critically ill patients are at increased risk of morbidity and mortality during transport. Risk can be minimized and outcomes improved with careful planning. It is strongly recommended that a minimum of two people accompany a critically ill patient. Because the transport of critically ill patients to procedures or tests outside the intensive care unit is potentially hazardous, the transport process must be organized and efficient. In order to achieve this, the minimum is to ensure four basic elements in organizing this process, which are: 1. Pre transport coordination and Communication, 2. Medical, 3. Equipment 4. Monitoring.

1.Communication by physician-to-physician and/or nurse-to-nurse communication to review patient condition. Before transport, the receiving location confirms that it is ready to receive the patient for immediate procedure or testing. The healthcare team (usually physicians and nurse) then prepare documentation in the medical record includes the indications for transport and patients' current status.
2. Medical staff usually consists of a nurse who has a competency for take care of critically ill patients. Additional personnel may include a emergency physician or anesthesiologist. It is strongly recommended that a physician with training in airway management and advanced cardiac life support accompany unstable patients. If patients is not transferred, the transport personnel will remain with the patient until returned to the basic unit.
3.Equipment. A blood pressure monitor, pulse oximeter, and cardiac monitor/defibrillator, equipment for airway management, an oxygen source of ample supply to provide for projected needs plus a 30-min reserve accompany every patient without exception. Basic resuscitation drugs, including epinephrine and antiarrhythmic agents as well as supplemental medications, such as sedatives and narcotic analgesics, are considered in each specific case. An ample supply of appropriate intravenous fluids and continuous drip medications (regulated by battery-operated infusion pumps) is ensured. All battery-operated equipment is fully charged and capable of functioning for the duration of the transport. In many hospitals, pediatric patients share diagnostic and procedural facilities with adult patients. Under these circumstances, a complete set of pediatric resuscitation equipment and medications will accompany infants and children. In mechanically ventilated patients, endotracheal tube position is noted and secured before transport, and the adequacy of oxygenation and ventilation is reconfirmed. If a transport ventilator is to be employed, it must have alarms to indicate disconnection and excessively high airway pressures and must have a backup battery power supply.
4. Monitoring During Transport. All critically ill patients undergoing transport receive the same level of basic physiologic monitoring during transport. This includes, at a minimum, continuous electrocardiographic monitoring, continuous pulse oximetry, and periodic measurement of blood pressure, pulse rate, and respiratory rate.
Conclusion: It is important to recognize that these process elements may frequently, and out of necessity, be implemented simultaneously, especially when stabilization and treatment are needed before transfer. Transport team coordination, planning and good communication are critical to safe and efficient patient transport.
Key words: Intrahospital transport

MODERN CHALLENGES IN THE WORK OF NURSES /TECHNICIANS

Milan Urošević
HEALTH CENTER ZAJEČAR, EMERGENCY DEPARTMENT

Much has been written about the quality of patient care in recent years, but little attention has been focused on the state of health and the successful functioning of healthcare professionals. They were found to be more stressed by fewer staff, increased workloads, longer working hours, patient expectations and workplace hazards. The morbidity of health care workers has increased compared to the general population.
All medical staff, but more often nurses/technicians, often face "burnout" syndrome at work, which is caused by chronic over-demands of the workplace. Work, in itself, is very stressful, since nurses have to deal with death and grieving patients regularly. They often work long shifts and nurses working in particularly stressful areas such as emergency services or intensive care units may face an even higher risk of burnout syndrome.

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

Although "burnout" syndrome may seem like a problem that most often occurs in experienced nurses, one gets the impression that young employees are also experiencing similar problems in situations where they are exposed to constant stress fulfilment of high-intensity situations.
In addition to this, an increasingly common problem is that, depending on the service/department s where they work, nurses can also be subject to a significantly higher rate of injury than workplace violence. Verbal violence is almost daily, while physical violence, although largely unreported, is still present in a significant percentage.
For the sake of illustration, in the period from 2021 to 2023, officers of the Zajecar Police Department intervened 17 times at the invitation of employees of the Zaječar Health Center. Of these 17 calls, as many as 8 were from the Emergency Department, 5 from outpatient clinics on the territory of the city (there are 4 of them) 2 reports from the Emergency Medical Service, 1 report from the department of psychiatry and 1 from the staff of the internal department.
Problems faced by health care workers in the workplace such as chronic dissatisfaction, burnout syndrome, increased morbidity and mortality compared to people of the same age, high rates of depression and an increased risk of suicide, significantly affect their health and their professional careers. These problems are associated with poorer care and lower patient satisfaction and increased healthcare costs. The future time will also have to provide support programs for healthcare professionals, as well as successful ways of solving these problems, in order to maintain the functioning of the entire health system.

EXPLOSIVE DEVICE TRAUMA

Nemanja Nikolić
EMERGENCY MEDICAL SERVICE NIŠ

Introduction: In the 20th century, numerous armed conflicts were fought on the territory of the Republic of Serbia. Pieces of unexploded munitions originate from the First Balkan War (1912–13), the Second Balkan War (1913), the First World War (1914–18), the Second World War (1939–45), the conflicts during the 1990s on the territory of the former Yugoslavia (1991–95) and the NATO bombing of the Federal Republic of Yugoslavia (1999). Despite the fact that some explosive devices are over a hundred years old, they can still be activated today, accidentally or intentionally. The full extent of the contamination of the territory of Serbia is currently unknown. Today, fourteen years after the end of the last conflict, 24% of the territory still carries some level of risk.
Case report: EMS Team, 25.03.2022 at 14:36h due to injury to workers on sand separation, where the worker suffered a head injury, conscious, stable. The team was on the scene for eight minutes, finding the patient in a sitting position, conscious, oriented, communicative. The inspection observes a laceration wound with a visualization of the inside of the oral cavity and neck, as well as a complete lack of the right branch and body part of the mandible, traumatic amputation of the fingers and left hand to the line of the wrist and laceration wound of the right lower leg. It gives the impression of a severe, life-threatening patient. Vital parameters: TA: 130/90mmHg, SF: 104/min, SpO2: 96%. Pulmo et cor: B.O. The patient was performed hemostasis of the laceration wound of the neck, ligation with a bandage 4cm above the line of tramatic amputation of the left hand, a venous pathway was placed, The Hartmann solution 500ml was included. The head and neck of the patient are manually fixed all the time,. Patient transported to EC to Resuscitation Ward. All the time the patient hemodynamically stable, communicative. Heteroanamestically, colleagues are informed that the injury occurred during an attempt to open an explosive device with a grinder, which he found in the sand pulled from the river. It was later determined that the explosive device dates back to The First World War. At the reception in the EC, he was examined by an orthopedist, a maxillofacial surgeon, ENT and a plastic

surgeon, after which he was introduced to the operating room. In the hall, a surgical tracheotomy, an amputated left arm, and a lacero-contuse wound of the right lower leg was repaired. Further diagnostics, MSCT determined linear fractures of the squama of the left temporal bone with extension to the parietal bones, multifragment fractures of all walls of both maxillary sinuses with fragment dislocation. Fracture of the lateral walls of both orbits. Fractures of lateral lamina pterigoid attachments bilaterally, fracture of the alveolar maxilla extension to the right. You can see multiple sides of the body intraorbitally right Multiple fractures of the mandible, missing part of the body and the angle of the mandible to the right. Gas inclusions in the soft tissues of the face, neck, mediastinum and anterior wall of the chest. An examination by an ophthalmologist found that the evacuation of the metal fragment in the intralaminar part of the left eye would lead to emptying of the eye chamber, and at this point surgical treatment was postponed. After two months of hospitalization and a large number of op procedures, he was discharged home.
Discussion: The mechanisms of injury caused by residual explosive devices vary depending on the type of explosive device, the depth of the soil in which they are buried and the weather factors. Typical mechanisms of injury include gunshot and gunshot wounds, shock wave injuries, burns, loss of extremities and injuries to internal organs. The patient suffered serious injuries to the head, neck, left arm and right lower leg. The speed and effective reaction of the medical team involves hemodynamic stabilization of the patient, the application of hemostasis and the placement of the venous pathway to compensate for circulatory volume and prevention of hypovolemic shock, to the appropriate health institution where further diagnostic procedures, interventions and therapy are available.
Conclusion: Injuries with explosive devices in peacetime are not common, but they certainly pose a risk to the population and the environment and most often occur accidentally. Different types of explosive devices and various mechanisms of injury make these incidents one of the most challenging scenarios in emergency medicine.
Keywords: polytrauma, explosive devices, head injury, traumatic amputation

PNEUMOTHORAX AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE-A CASE REPORT

Marina Perović [1], Svetlana Bojičić-Bulajić[1] Slađana Vujačić[2], Žanka Anđelić[2]
[1]EMERGENCY CENTER, CLINICAL CENTER OF MONTENEGRO, [2]EMERGENCY MEDICAL SERVICE MONTENEGRO

Introduction: Spontaneous pneumothorax (SP) is defined as the presence of air in the pleural cavity and remains a significant health problem. Secondary SP (SSP) is associated with underlying lung diseases, such as cystic fibrosis, chronic obstructive pulmonary disease (COPD), and interstitial lung disease (ILD), and is associated with poor outcomes. The current guidelines in the management of SSP have not been updated since the last decade; therefore, new protocols focused on the management of SSP should be evaluated. We present case of patient admitted with SSP which wos treated with interventional drainage and hospitalization. In this case, the pneumothoraces resolved without further complications.
Case report: The case was a 70-year-old male with a medical hystory of chronic obsreuctive lang desease.He was addmited in ED at Clinical Centre of Montenegro with low saturation SpO2 45% on room oxigen.We made lab analisis and X ray of chest which showed scecundary spontenus pneumotorax and treated with interventional drainage and often hospitalization is required and we admited patient to Thoracic surgery department.

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

Discussion; SSP is associated with high morbidity and mortality. The annual incidence of SSP is 6.3 and 2 per 100,000 men and women, respectively. The majority of patients with SSP have compromised lung function due to underlying disorders, and therefore, it often presents as a life-threatening disease requiring immediate action [10]. Current recommendations in the management of SSP included interventional drainage or chest tube insertion, and often hospitalization is required and prolonged,
Conclusion: The aim of this case report was to discuss treatment options available for secundary spontenus pneumotorax and practical problems faced during management of such a patient.
Keywords: pneumothorax, HOBP

CASE REPORT OF THE CARE OF A POLYTRAUMATIZED MOTORCYCLIST

Jelena Bulajić
GENERAL HOSPITAL „DR ALEKSA SAVIĆ“ PROKUPLJE

Introduction: According to the World Health Organization, motorcyclists and mopedists have been declared vulnerable categories of road users. Together with pedestrians, they represent the most endangered category of traffic participants, as they collectively account for about 45% of the total number of all killed in traffic accidents. Speed (exceeded, misfit) is the main cause of a motorcycle accident. Head injuries are in about 75% of cases the cause of death among motorcyclists. Helmet riders are three times more likely to survive.
Objective: To show the process of taking care of a polytraumatized motorcyclist, to emphasize the importance of wearing protective equipment.
Case report: Pacjient M.Đ. (20 years old) was brought to resuscitation of the Emergency Center of KC Niš accompanied by the medical team HMP Aleksinac due to injuries sustained in a traffic accident in which he participated as an engine driver. Followers said he was moving at high speed and hit a bank, after which he flew 10 meters and fell on a hard surface. The helmet was completely crushed from the front. At the first contact with the doctor, he was still conscious at all times. He didn't throw up. During the transport, he received amp. Dikolfen I, amp. Controloc I, amp. Dexason II, salt. NaCl 500.0, a cervical collar was placed and lacerocontnuzwounds were processed. He was allergic to penicillin. Vital parameters: TA=165/85 mmHg SF=104/min SpO2: 94%, RF=14/min. At admission the patient conscious, euphoric, medium OMG, normal skin color. The patient is placed on a monitor, oxygen, blood for CBC was taken, biochemistry, screening, a urinary catheter was placed. Head and neck: multiple facial injuries, large frontal hammatoma, larger lacerocontus scalp wound frontal scalp extending from left to right, incision of the upper lip and nose dorsum, larger incision of the tongue, fracture of the incisors to the right. Torax: symmetrically movable on both sides, vesicular breathing on both sides. Heart action rhythmic, tones clear, no noise. Abdomen: above the flat chest, palpartor soft, insensitive. Extremities: right hand and wrist swollen, difficult to move, left forearm swollen with crepitations. Both ankles swollen, but mobile. Therapy in resuscitation: Sol. NaCl 0,9% 500,0 No II i.v. Sol. Paracetamol 1 gr i.v., AT protection, Salt. Alvolamide 500 No I Sol. NaCl 500+ amp. Analgin I Amp. Pantopresol I Amp. Dexason II Performed MSCT according to trauma protocol, as well as X-rays of the right wrist, left forearm and both ankles. X-ray: Fracture of the middle third of the left radius with dislocation. Multifragment fracture of the distal end of the right radius with dislocation. Laboratory findings normal except Le – 22,5; D-Dimer – 8072.0 MSCT finding (excerpt): Fracture of the nasal bone on the left with dislocation. Fracture of the lateral wall of the left orbit. Fracture of the anterior wall of the left frontal sinus with expansion towards the roof of the left orbit without dislocation. Frontally on the same side, edema and defect of subcutaneous soft tissue with the content of densymetric blood values and gas inclusion are visible. Hemorrhagic content in the right frontal and right maxillary sinuses. C3 vertebral body of reduced height, angular plates with Schmorl's

hernias. Fracture of the spinous continuation c4. Spinal canal without stenosis and without foreign content. Bilaterally in the pulmonary tips and in the anterior parties more pronounced upper lobes, contusion foci are visible. No effusion or pneumothorax. There are no traumatic lesions on the parenchymatous organs of the abdomen and small pelvis. Along the posterior wall of the fundus of the stomach subdiaphragmatically, several subsantimetric hyperdense changes of high densimetric values close to the metal – foreign contents are observed subdiaphragmatically. After completing the diagnostics, they were consulted: neurosurgeon, chest surgeon, abdominal surgeon, orthopedist, ENT specialist, maxillofacial surgeon, plastic surgeon. After the rehabilitation of injuries to the head, face and both hands and after therapeutic care, a joint decision was made to continue treatment in ICU A2.
Conclusion: Despite speeding being the main cause of motorcycle accidents, which are head injuries in about 75% of cases the cause of death among motorcycle riders, helmeted riders are three times more likely to survive. The importance of proper and timely prehospital and initial hospital care of a polytraumatized patient is also important, which requires readiness, skill and a high level of knowledge of the personnel involved in it, such as medical technicians, general practitioners, residents and emergency medicine specialists.
Keywords: Polytrauma, care

THROMBOTIC THROMBOCYTOPENIC PURPURA

Jelena Bulajić[1], Miodrag Vučić[2], Goran Marjanović[2], Sanja Veličković [2]
[1]GENERAL HOSPITAL DR ALEKSA SAVIĆ PROKUPLJE, UNIVERSITY CLINICAL CENTRE NIŠ, CLINIC FOR HEMATOLOGY

INTRODUCTION. TTP is an emergency in which the patient's healing and survival depends on the speed of diagnosis, as well as on the speed of initiation of active treatment. It is a multisystem disease that is characterized by the formation of platelet aggregates throughout microcirculation, leading to thrombocytopenia, hemolytic anemia, ischemia and necrosis of the affected organs, most often the brain and kidneys. The main mechanism of TTP formation is decreased activity of ADAMTS 13 (a protein that splits and divides von Willebrand factor). It is a gene mutation or the appearance of antibodies to ADAMTS 13. TTP can be a primary disease or a secondary complication of malignant, infectious, immune diseases, trauma and pregnancy. It is clinically manifested by symptoms and signs of brain and kidney damage, as well as a picture of hemorrhagic syndrome. The diagnosis is made on the basis of anamnesis, clinical picture and laboratory parameters (thrombocytopenia, hemolytic anemia, LDH and indirect bilirubin elevated). In periphrene smear schizocytes, direct Coombs test negative, coagulation screening is generally neat. Differential diagnostic exclude HUS (oliguria or anuria) and DIC (fibrinogen low, INR/PT prolonged, PT prolonged, aPTT prolonged). The main form of Treatment for TTP is plasma replacement therapeutic (plasmapheresis), which should be started in the first few hours, followed by corticosteroids in high doses and symptomatic therapy.
METHODS. A 46-year-old D.B. patient was admitted to the Clinic for Hematology and Clinical Immunology of the Clinical Center Niš due to extreme thrombocytopenia and anemia determined in the parent institution, where he was examined and treated three days after the onset of the first symptoms (fever, numbness of the hands, bleeding from the gums, short-term speech disorders that spontaneously receded, general weakness and malaise).
At the admission he was in a severe general condition, febrile, confused, disoriented, limp right extremities, with visible petechiae on the skin.
CBC: Tr – 12, Er - 1,69, Hgb – 60, Hct – 0,179, Re – 6,8%, Le – 8,1, Ba – 0,0.
In a peripheral smear – schizocytes; Coombs' test was negative.
Hemostasis: PTV – 13, PT % 91, PTV INR – 1.18, fibrinogen – 4.3, aPTT – 29.6.

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

Biochemistry: urea 10,0, creatinine 134,1, LDH 2897, CRP 14.5, Fe 43,3, Tproteins 71, albumin 39, Na 140, K 4.1, uric acid 451, TBIL 38.2, DBIL 6.8, haptoglobin 0.0.
A neurologist was consulted, inducing endocranium MSCT (in the right cerebellum hyperdensity 12x8mm of vague etiology), as well as a nephrologist. Since laboratory parameters (mechanical hemolytic anemia, thrombocytopenia) along with neurological disorders and initial renal weakness indicated that it was a patient with clinical presentation of TTP, treatment was immediately initiated with plasmapheresis, using fresh frozen plasma and high doses of corticosteroids, with rehydration, antiedematous and other necessary therapy.
There were signs of improvement (Tr >50), but the state of consciousness did not improve significantly, and eventually there was a coma, so the patient, with the consultation of a neurologist and anesthesiologist, was transferred to JIN neurology.
Continued with plasmapheresis and other necessary therapy, but on the 21st day of hospitalization there was a lethal outcome.
Discussion. Emergency conditions in hematology are very complex, life-threatening conditions, which require a high degree of knowledge and skill in prehospital and early hospital triage, diagnosis, initial care and treatment.
TTP is a rare hematological disease, but its severity and severity requires attention to every patient with thrombocytopenia, signs of intravascular hemolysis, especially those with neurological disorders. It is very important about it: TTP should be excluded or recognized in time and intensive treatment should be started immediately.
Key words: Thrombocytopenia, hemolytic anemia, plasmapheresis.

PTE AS A COMPLICATION OF MALIGNANT DISEASES-CASE REPORT

Irina Granolić
GENERAL HOSPITAL SREMSKA MITROVICA

Introduction: Pulmonary embolism is a vascular disease that occurs as an acute flow obstruction in the pulmonary artery and/or its branches.
Method: Presentation of a case from practice with the Emergency Department in General Hospital of Sremska Mitrovica. A patient suffering from colorectal cancer with metastases in the lungs and liver presents with complaints such as general weakness, malaise, and dyspnea that occurred on the day of admission.
Results: Wells score 7 - high risk for PTE, D dimer over 2,500 ng/ml
CT pulmonary angiography - thrombosis of subsegmental branches of pulmonary arteries
Discussion: Proper history taking, review of previous medical documentation, complete physical examination, use of extended diagnostic methods (ECG, GAC, laboratory analysis, D-dimer, CT pulmonary angiography) provided an adequate diagnosis and treatment was started
Keywords: PTE, malignant disease, dyspnea

SAMPLING FORENSIC TRACES IN CASES OF SEXUAL VIOLENCE IN EMERGENCY MEDICINE

Bogdan Pinterović[1], Aleksandra Antović[1,2], Goran Ilić[1,2], Miodrag Zdravković[1,2] Milica Miljković[1], Dimitrije Pančić[1] , Marija Nikolić[1]
[1]INSTITUTE OF FORENSIC MEDICINE, NIS, SERBIA, [2]UNIVERSITY OF NIS - FACULTY OF MEDICINE

Introduction: Sexual violence has taken on a pandemic character worldwide in recent decades, making it not only a global social and societal issue but also a serious public health problem that directly affects professionals working within the healthcare system. One of the many subjects of forensic medicine is the clinical-forensic examination of living individuals, which includes expertise in sexual offenses.
Method: Forensic medical examination of sexual offenses entails a mandatory clinical examination of both victims and perpetrators of this criminal act (informed consent, medical history, physical examination, specimen collection, proper marking and preservation of evidence and biological material, adequate documentation, and preferably, photography).
Results: Doctors and other healthcare professionals in emergency units usually establish initial contact with victims and/or perpetrators of sexual violence, which is why they are legally obliged to not only perform a general physical examination and provide urgent and primary healthcare but also secure potential evidence of the specific criminal act. It requires professional conduct in accordance with current medical standards and compliance with the criminal and legal provisions regulated by the Criminal Procedure Code and the Criminal Code of the Republic of Serbia. While working with victims and/or perpetrators of sexual violence, healthcare personnel in units for the reception and care of urgent cases also involve the collection of forensic evidence – which includes obtaining blood and urine samples for chemical-toxicological analysis from potential victims and assailants, vulvar, vaginal, endocervical, anal, and oral swabs, swabs from bite marks or areas with suspected traces of biological and non-biological origin, contact traces, subungual (under the fingernail) material, pubic hair, clothing, personal items, and more.
Discussion: Understanding the methodology for dealing with victims and/or perpetrators of crimes related to sexual freedom violations is crucial for further expert activities and forensic conclusions. Therefore, healthcare workers must continuously educate themselves on how to handle cases of sexual violence, as failures in their work can lead to professional and criminal liability.
Key words: clinical forensic medicine, emergency medicine, sexual violence.

SEVERE TRAFFIC TRAUMA - HEALTH SYSTEM TEST – CASE REPORT

Milijana Videnović
HEALTH CENTER ZAJEČAR, EMERGENCY MEDICAL SERVICE

Traffic traumatism is one of the leading causes of mortality and disability. According to data from the Traffic Safety Agency in 2021, 34,579 traffic accidents occurred in the territory of the Republic of Serbia, in which 521 people were dead, while 19,905 were slightly and seriously injured. Of the total number of injured, 11 children (0-14 years) lost their lives, while 1322 children were injured. Between the ages of 15 and 30, 101 deaths occurred, while 6,578 were slightly and seriously injured.
CASE REPORT: On 05.09.2023. At 20:27min EMS Zajecar received a call from residents of the village of Dubočane (30km away) that a traffic accident occurred where two children were injured, one of whom is more serious (his lower leg was amputated). Almost simultaneously, a call came from the

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

father of the injured child, who panickily asks for advice on what to do, informing us that he is already on his way. A medical technician advises to tie the injured leg above the injury site and to take the amputated limb with him, however, the father failed to find it. In the meantime, the ED of the GH in Zajecar was informed about the traffic accident. Somewhere halfway through the ambulance crew takes over the child (20:37min – 10min from the call), who is pale, covered in cold sweat, conscious, oriented. The technician tightens the belt, due to inadequate temporary hemostasis, and additionally wraps the injured limb. Due to the risk of hypovolemic shock, initially manages to provide one iv line, an administered solution of NaCl 0.9% 500 ml. All the time the child is conscious and stable. Meanwhile, a police officers found an amputated limb and reached the hospital. At the hospital admission: a patient aged 12 years, injured in a car accident as a passenger of a motorcycle. Dominates injury of the left lower extremity in the form of traumatic amputation in the lower knee line, with a significant defect of the muscles of the posterior thigh, without active bleeding, with a lot of detritus and foreign material, with a skin defect almost to the gluteal furrow, hemostasis in the field done with a strap of the skin, after loosening it without active bleeding. Done generous toilet wounds, removal of foreign material, small fragments of tissue and bone. At the same time, due to peripheral vasoconstriction, it was difficult to place the second iv cannula and replenish the volume, the requested urgent blood analysis could not be provided. In these conditions, it is decided to take actions to ensure emergency transport with a complete medical team, and to refer the injured patient to the EC Belgrade. Using at that moment the only available venous pathway, the patient is administered crystalloid solutions, antibiotic and analgesic therapy, and after additional stabilization the patient is referred to Belgrade. Also, the amputated part of the lower leg was sent appropriately with the patient. The curiosity of this transport is that the Zaječar Police Department organized a police escort all the way, so that the ambulance could arrive as quickly as possible in the tertiary institution.

Discussion. The most important factor influencing the indication for replantation is the ischemic time of the amputated part of the body. From a practical perspective, the permissible time of ischemia is inversely related to the amount of muscle mass in the amputated part of the body. Clinical experience leads to the conclusion that the upper limit of the permissible warm ischemia is 10 to 12 hours for the fingers and 4-6 hours for amputated parts with muscle mass (which quickly necrotizes after ischemia, due to high metabolic requirements). With proper cooling of the amputated part to 2-4 °C, the time limit can be extended up to 24 hours for fingers and 10 hours for amputated areas with muscle mass.

Let us now consider the real facts involved in the calculation of ischemic time. Namely, EMS Zajecar provides the territory of the city and 42 villages, where the farthest villages are 50km from the city. The big problem is the configuration of the terrain, because it takes about 40 minutes to reach some villages before the arrival of the team, which is a long period of time for the call of the first order of urgency.

Another, no less, problem is the need to provide adequate diagnostics of injured patients, which also requires a certain period of time... Which, of course, additionally consumes ischemic time of the amputated limb. The cooperation between the pre-hospital and hospital team was excellent, which only ensured that the ischemic time was significantly saved, and provided the maximum chance for the success of the replantation team. And finally, when the decision is made on the transfer to a higher institution-EC Belgrade, the next time interval is an additional about 2h 30min (250km distance from Belgrade).

Conclusion. Traumatic amputation on the extremity is always extremely severe trauma, commensurate with the size of the amputated part. It is a very stressful, unexpected situation for the injured and the family. These injuries not only disturb the physical integrity of a person, independence, working capacity, but also significantly and permanently disrupt the psychological balance of the injured and his family. Good communication between pre-hospital and hospital teams, as well as staff ingenuity, are necessary and crucial in reducing "idle ness" i.e. waste of valuable time.

In situations where time is a key factor for the outcome of treatment, it is necessary to consider the need and possibility of organizing helicopter transport. Currently, it is not available in the routine work of health institutions, but the introduction of HEMS (Helicopter Emergency Medical Services) system in Serbia would greatly improve the chances of survival of severely traumatized patients.

SPECIFICS OF CARDIOPULMONARY RESUSCITATION IN POISONING IN PREHOSPITAL SETTINGS

Jadranka Trifunov, Tatjana Mićić, Milica Ilić
EMERGENCY MEDICINE SERVICE NIŠ

Introduction: Acute poisoning is a common pathology in the everyday work of doctors who deal with prehospital medicine. Regardless of the initially manifested clinical presentation, any poisoning can be potentially lethal. The most common lethal causes of poisoning are narcotics and medicines, and less often pesticides, carbon monoxide, alcohol and others. Poisoning can be accidental or intentional. Regardless of the poisoning cause and the intention, in the case of Cardiac Arrest (CA) caused by poisoning, cardiopulmonary resuscitation (CPR) should be started immediately, following the actual principles and recommendations, while respecting the specifics depending on the poison and toxic expousing type.
Material and methods: Analysis of current recommendations for cardiopulmonary-cerebral resuscitation and data from the National Poison Control Center.
Results: During cardiopulmonary resuscitation and general during care of poisoned patients, special emphasis was placed on safety. It is important to pay attention to the poison and toxic expousing type, and if it is necessary, wait for the competent services to ensure safety and conditions for the work of the medical team. Attention should also be paid to the potentially hostile mood of other present persons, if they are under the effect of psychoactive substances. Current recommendations emphasize the danger of mouth-to-mouth breathing in basic life support in case of cyanide, corrosive, organophosphate and hydrogen sulfide poisoning, and emphasize early endotracheal intubation in advanced life support because of the high risk of regurgitation. In addition, adequate ventilation accelerates the elimination of poisons that have been inhaled. Hypothermia or hyperthermia is common in poisoned patients, so they should be treated adequately. In case of poisoning, a longer duration of CPR is recommended, especially in younger people because poisons can be metabolized during prolonged resuscitation measures. At the same time with the implementation of CPR measures, it is necessary to take a heteroanamnesis and pay attention are there some tablets or empty boxes or vials of medicines nearby, traces of powdery substances, syringes and needles, empty packaging of household chemicals or compounds used in agriculture, as well as other substances. We should also pay attention on specific smell if it is present. Identification of the poison is important in order to apply the specific antidote as soon as possible if it exists and if it is available. Only a small number of poisons have their specific antidotes, and only some of them are available in prehospital settings: benzodiazepines - flumanesil, opioids - naloxone, beta blockers - glucagon, organophosphates - atropine, carbon monoxide (CO) - oxygen.
Discussion and conclusion: CPR in prehospital settings in poisoned patients has its specificities. It is very important for doctors who deal with prehospital medicine to know them. In the case of poisoning, the look-listen-feel method is not only about checking the patient's breathing, but also about recording all the circumstances in the environment and possible identification of the poison. If it exists and if it is available, a specific antidote should be given as soon as possible. All doctors should know the telephone number of the toxicologist on call at the National Poison Control Center, who is

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

available 24 hours. CPR for poisoning is prolonged. Current recommendations do not support the routine use of flumazenil and naloxone in overdosed patients in CA, although it has some success in practice. Considering that measures to prevent further absorption of poison and acceleration of poison elimination during CPR cannot be performed in prehospital conditions, and that poisoning is one of the potentially reversible causes of CA, as well as that these patients require other analyzes and therapeutic procedures available only in hospital conditions, after initial treatment, hospitalization of these patients is necessary.

Key words: CPR, poisoning, prehospital

SPONTANEOUS PNEUMOTHORAX IN A YOUNG PERSON – CASE REPORT

Marija Nikolić
HEALTH CENTER ZAJEČAR, EMERGENCY DEPARTMENT

Introduction. Pneumothorax implies an urgent and potentially dangerous condition. It can occur spontaneously or through illness/trauma. It is about the accumulation of air in the intrapleural space due to the interruption of the continuity of the visceral or parietal pleura, the equalization of atmospheric and intrapleural pressure and the collapse of the lung. In addition to spontaneous, pneumothorax according to the occurrence can be: traumatic (external and internal) and artificial (diagnostic and therapeutic). Also, pneumothorax can be complete or partial, unilateral or bilateral, and in relation to the state of the bronchopulmonary fistula - closed, open and tension (valve). The most common symptoms are chest pain, shortness of breath, fatigue, rapid heartbeat.

The aim of the paper. Demonstrate the importance of knowing the symptoms of pneumothorax in order to improve the triage of patients with chest pain

Method. We're going to show the case of a 27-year-old man. in which the development of spontaneous pneumothorax occurred.

Case report. In the afternoon, the patient reports for examination for chest pain, fatigue and difficulty speaking. It is anamnestic that his father passed away the previous night, and he is upset, he feels weak. The previous evening he reported to the doctor at the Health Center, where he received the amp Bensedin and this morning (on the advice of the doctor) took tbl. Bromazepam.

He doesn't take any medication in chronic therapy.

The initial triage marked him as a patient of the Second Level of Urgency, and was asked to wait in the waiting room for an examination of the previous patient that was ongoing.

At the admission: The patient speaks slowly and quietly, gets tired during answering questions. He tolerates a lying position well. He's visibly upset, worried, scared, pale. TA 130/80. ECG: sinus, normogram, sf 102/min, no st and t disturbances. SpO2 96. Peripheral pulses symmetrically palpable in pre-irradiation sites. No swelling of the lower extremities present.

Pulmo: tahypoic, impaired to inaudible breathing on the left (!)

X-ray of the heart and lungs - and the left side, occupying all the pulmonary fields, is present avascular zone of enhanced transparency, which is clearly separated by a clear line from the collapsed pulmonary parenchyma, which is medianically displayed along the hilus. The described zone of enhanced transparency corresponds to the complete pneumothorax. Right lung without focal lesions. No signs of pleural effusion.

After diagnostics, the patient is referred to the surgeon, during hospitalization complete reexpansion is achieved, and the patient is discharged home.

The same patient, after this episode, reported to the ED 4 more times, 2 times due to relapse of pneumothorax, once because of pulmonary thromboembolism, once due to deep vein thrombosis.

Discussion. Primary spontaneous pneumothorax is one of the most common pulmonary problems affecting adolescents, with an annual incidence ranging from 15.5 to 22.7/100,000 people and with a female/male ratio ranging from 1:3.3 to 1:5 (1) The clinical course of primary spontaneous Ptx is variable with a relapse rate ranging from 25% to 54%. Chronic lung disease (e.g., chronic obstructive pulmonary disease) is a significant determinant of relapse. Although spontaneous Ptx is most common in patients without clinically evident lung disease, it has been shown that these patients most often have changes similar to emphysema in the pulmonary parenchyma (2) Nevertheless, the role of parenchymal bulls as the sole cause of spontaneous Ptx is not so significant, as it is shown only in about 20% of patients.
Conclusion. Patients with chest pain and COPD are common in the work of the emergency medicine service. Given the wide range of symptoms that cause chest pain (starting with myocardial infarction, pulmonary thromboembolism...) this condition certainly deserves extra attention and caution in interpreting and shedding light on etiology. In this particular case, anamnestic data significantly influenced the triage decision, but the examination and appropriate diagnostics still determined the cause of the patient's problems. Although triage does not mean determining an accurate diagnosis but classifying patients by urgency, continuous education in conducting triage is required. On the other hand, the constant problem of "overcrowding" in emergency medicine's everyday work increases the risk of potential problematic decisions, which should be taken into account more.
Keywords: Chest pain, spontaneous pneumothorax, triage

SELF- MEDICATION AMONG HEALTHCARE WORKERS AT THE EMERGENCY MEDICINE SERVICE NIŠ

Tatjana Mićić, Ivana Ilić, Jadranka Trifunov, Milica Ilić
EMERGENCY MEDICINE SERVICE NIŠ

Introduction: Self-medication is the drug use without prior consultation with a doctor. Research shows that the prevalence of self-medication among healthcare professionals is high all over the world. In this context, healthcare workers - doctors cannot be considered as their own doctors. We believe it is very important to know the most common reasons for self-medication by healthcare professionals, as they are expected to educate patients on the proper use of medications.
Method: An anonymous survey with questions related to the respondents' characteristics, their awareness of self-medication, the most common health problems, the type of medicine and the reasons they used it without consulting a doctor.
Results: The anonymous survey included 40 healthcare workers, of which there was an equal number of doctors and nurse-technicians. More respondents were female. Their work experience was at least 1 and at most 32 years. Self-medication is represented in the highest percentage among female respondents and doctors. The most common reasons for their self-medication are the attitude that they carry out responsible self-medication, lack of free time to visit a doctor, and mistrust of another (family) doctor. Among nurses - technicians, the most common reasons for self-medication are the lack of time to visit a doctor and the attitude that they know what medications they should use because they have had such problems before. The most common medical conditions for which healthcare workers used medicines without prior consultation with a doctor are fever, respiratory problems, gastrointestinal problems, back pain, urinary infections, insomnia and nervousness. The most frequently used medications were from the group of analgoantipyretics, antibiotics and anxiolytics.
Discussion: When done responsibly, self-medication can be self-care. The obtained results show that the majority of healthcare workers correctly recognized their health problems and that they used

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

appropriate medicines to relieve them. However, there is also a risky behavior associated with the self-medication of healthcare workers, and it is reflected in the following: 20% of the respondents have never consulted a doctor in the past due to complaints they self-medicated (rapid heart rate, anxiety, insomnia, high blood pressure, presence of blood in the stool), although they think they should; 60% of respondents on their own treated respiratory and gastrointestinal complaints, with or without elevated body temperature, without reporting to be tested for Covid 19; respondents occasionally used or regularly use medications to which access should be controlled (antibiotics, psychotropic drugs). In addition, as many as 80% of the respondents believe that patients often see a doctor unnecessarily because of complaints that can be relieved by using medicines from the home pharmacy. This attitude, although somewhat justified in practice, can affect the advices that healthcare professionals give to patients.
Conclusion: The obtained results show that it is necessary to increase the awareness of healthcare workers about responsible self-medication, because they are the strength of the health system that can and should influence the responsible use of medicines in the whole society.
Key words: self-medication, healthcare workers

THE IMPORTANCE OF (HETERO)ANAMNESIS IN THE DIAGNOSIS AND TREATMENT OF EMERGENCY CONDITIONS

Slađana Vujačić[1], Žanka Anđelić[1], Marina Perović[2]
[1]EMERGENCY MEDICINE SERVICE MONTENEGRO, [2]CLINICAL CENTER OF MONTENEGRO

Introduction: Acquiring knowledge and mastering the necessary skills of a doctor is impossible to imagine without a previously mastered lesson on the importance of a good anamnestic and/or heteroanamnesis treatment of the patient. Anamnesis (ana mnese - memory) represents a conversation with the patient with the aim of obtaining the necessary information; while the heteroanamnesis consists of the patient's data provided by his companion. The presentation of the case that is the subject of this paper indicates the importance of this part of the patient's treatment in the diagnosis and treatment of emergency conditions.
Methods: Presentation of the case of a 75-year-old patient who was brought to the Emergency Center by the Emergency Medical Service team after a previous call by family members, who found him in the bathroom in a bad general condition, accompanied by vomiting of dark-tarry contents. Medical documentation shows: (hetero)anamnestic data, results of physical examination, laboratory analyses, results of examinations by internists - gastroenterologists, cardiologists, endocrinologists, neurologists; neurosurgeon, anesthesiologist, physiatrist; esophagogastroduodenoscopy, MSCT of the abdomen, X-ray of the lungs, MSCT of the endocranium, doppler sonography of the blood vessels of the neck, and the therapeutic approach and further recommendations.
Results: In the case of a patient who was initially admitted and monitored as gastrointestinal bleeding of unknown origin, further diagnostic work-up revealed its absence, and on CT scan of the endocranium, signs of intraventricular hemorrhage were found in the ventricular system, dominantly in the left lateral ventricle; interhemispheric, and left occipital, in the sulci, discrete signs of subarachnoid hemorrhage. A previously performed esophagogastroduodenoscopy confirmed the absence of gastrointestinal bleeding, and the CT scan of the abdomen was normal. After the diagnostic treatment, which lasted more than 6 hours, the patient was further treated as neurological and neurosurgical.
Discussion: The specific case confirms the importance of anamnestic processing for the purposes of establishing a precise diagnosis, and thus choosing a timely therapeutic approach. Heteroanamnesis

information about vomiting of dark tarry content leads doctors to the need to search for gastrointestinal pathology, and in this patient, significant time is devoted to examinations that would prove or rule out such a thing. His general condition, along with the fact that he vomited only after a few hours, further neurological and neurosurgical treatment actually indicates the existence of intracranial hemorrhage as the underlying cause. The patient was hospitalized and treated with: antiedematous, anticoagulation, antihypertensive, rehydration, antibiotic, gastroprotective, and symptomatic and supportive therapy. Neurosurgical operative treatment is not indicated. In the further course, significant resorption of intracerebral, intraventricular and subarachnoid hemorrhage occurred. Early rehabilitation included. On discharge, he was conscious, oriented, carried out orders, not verticalized, on the lower extremities with medium-severe weakness more to the right, on the upper ones, lighter right-sided weakness. A month after hospitalization, he stayed at the "Dr Simo Milošević" Institute for Physical Medicine, Rehabilitation and Rheumatology. Today, the patient is conscious, oriented, moving independently, without the need to use aids. He uses regularly prescribed therapy and undergoes regular medical check-ups. Despite the outcome that was satisfactory for this patient and resulted in his recovery, his case indicates the need for careful interpretation of heteronamnestic data in order to arrive at a precise diagnosis in a timely manner, on which depends the further treatment and prognosis of each patient, the quality of his life, and sometimes his life itself.

Keywords: anamnesis, heteroanamnesis

TREATMENT OF A POLYTRAUMATIZED PATIENT IN EC NIS - CASE REPORT

Petar Petković, Nela Veljković, Gordana Pavlović
UNIVERSITY CLINICAL CENTRE, EMERGENCY CENTRE, NIŠ

Introduction: By definition polytrauma is injury to several different organs/systems that occur at the same time, and there is at least one injury is life-threatening. Severe traumatic injury is a major health problem worldwide, responsible for 1 in 10 deaths, and causes death in more than 5.8 million people worldwide annually. The total hospital mortality of polytraumatized patients is up to 25%.

Case report: 71-year-old patient Z. K. was brought by ambulance to ED Niš due to injuries sustained in a traffic accident in which he was involved as a tractor driver. On admission, he is conscious,communicative, afebrile, with normal color of skin, but does not reconstruct the event. Vital parameters are: Ta 124/77 mmHg, SF 100/min and Spo2 88% without O2. Upon admission, all clothing was removed to examine the patient's injuries, several venous lines were opened (with an 18G and 20G IV cannula), an analgesic was added and volume replacement was started. Locally on the head and neck there is a cut on the back of the head, a frontoparietal cut on the upper lip and traces of blood on the face. After taking blood for BH, KKS, coagulation screening and D-dimer, the patient was sent to MSCT according to the trauma protocol, accompanied by a technician and emergency physician. After the diagnostic procedures are done, a urinary catheter (Foley 18) was placed and about 350 ml of clear urine was obtained, antimicrobial therapy was ordered (amp. Ceftriaxone 2x1g i.v.), antitetanus protection and continued volume replacement. Monitoring of hemodynamic and respiratory parameters is continuously performed: On MSCT is found: Serial fracture of VI - X ribs on the left side, VII and VIII ribs with dislocation and hematoma of the head. Thoracic surgeon, neurosurgeon, MFS and anesthesiologist were consulted. Repaired both cuts in ED. Outcome - patient admitted to ICU for for further monitoring.

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

Conclusion: Polytrauma represents the biggest challenge in quick and adequate patient care. Simulated, timely and adequate treatment of injuries is of crucial importance for the outcome. Teamwork and knowledge of all procedures are vital to providing a high standard of patient care. From nurse is expected to have many skills and must be adaptable to a situation that changes frequently and rapidly.
Key words: polytrauma, nurse.

TREATMENT OF PATIENT WHO ATTEMPTED SUICIDE BY HANGING-CASE REPORT

Matija Marković
EMERGENCY MEDICAL SERVICE NIŠ

Introduction: Hanging (lat. Suspensio) is a violent mechanical suffocation from the group of strangulation asphyxias, in which the disturbance or cessation of breathing occurs due to the tightening of the neck with a noose (rope, cord, scarf, chain, etc.), which is passively tightened by the weight of one's own body. If the body of the hanged hangs freely without touching the ground, in forensic practice it is a so-called complete suspension, as opposed to incomplete suspension (eg, suspension in a kneeling or supine position). When the neck is clamped by any means, death can occur not only due to mechanical suffocation, but also due to a fracture of the second cervical vertebra or due to pressure on the neck blood vessels and consequent circulatory disturbance. There is pressure on the nerves and consequent reflex disturbance of the heart, also. According to WHO, hanging is the most common way of suicide in the world. Although there is a lack of comprehensive records, suicide rates are rising globally. According to data from 2020, there were 24,340 deaths by hanging in Serbia in the last 30 years, more common among men than women, but this trend is significantly decreasing.
Case report: On April 18, 2023. at 2:08 a.m., the emergency team received a call because of a man had hanged himself in his apartment. I arrive at the scene of the accident at 02:11. Together with the Police, we enter the apartment and find a 52-year-old male person in a semi-sitting position, unconscious, pale, with shallow breathing, leaning on another male person. We get the information that cousin quickly lowered him to the ground by cutting the rope with which he tried to hang himself. After lowering the person to a lying position and opening the airway using the oropharyngeal airway, the person begins to breathe normally. On further examination, vital parameters were: TA 90/45mmHg, SF 110/min, SpO2 91%, RF 16/min. On auscultation, the action of the heart was rhythmic, but the person was tachycardic, while over the lungs there was a discreetly quieter breath soumd. ECG findings: sinus rhythm with a frequency of 110/min, without ischemic changes in the ST segment. Local findings: On both sides of the neck, from the rope, there are 4-5 cm long lacerations. Soft tissue was without swelling, both externally and internally. We immobilized the injured person's cervical spine with a collar, start Ringer's solution, in addition gave an ampo of Lemod-solu a 40mg and transport the patient to ED.
Conclusion: This case shows us that for the survival of people who tried to take their own life in this way, it is important to have a quick reaction from the society. Recognition of suicidal ideas from the patient's surroundings and quick medical treatment at the event itself by the medical team in the field is most important. Adequate immobilization of the cervical spine and opening the airway, as well as preventing further injuries are most emergency procedures that should be done in the field.
Key words: suspension, medical treatment

VENTRICULAR TACHYCARDIA IN A PATIENT WITH NON-SPECIFIC COMPLAINTS

Milica Ilić, Tatjana Mićić
EMERGENCY MEDICAL SERVICE NIŠ

Introduction: Ventricular tachycardia (VT) is defined as a series of three or more ventricular extrasystoles with a frequency between 100 and 250/min. Conscious patients with VT usually have complaints in the form of chest pain, suffocation, fainting, weakness, subjective feeling of rapid heartbeat.
Case report: Patient R.M., male, 76 years old, came to the clinic of the Institute for Emergency Medicine in Nis, complaining of weakness and giving the general impression that he was not difficult patient. The anamnestic data were non-specific and incomplete, and the medical documentation was in a foreign language. Along with the history taking, the patient's SpO2 was measured at 97%, and we note that the pulse oximeter shows a heart rate of 185/min. The TA was immediately measured, which was 100/70 mmHg, and an ECG was performed, which showed a rhythm disturbance of the type of tachycardia with wide QRS complexes. The patient's IV line was opened and drug therapy was started. After 2 ampoules of Amiodarone in 5% glucose solution were given, the patient was transported with a medical team to the Cardiology Clinic with an SF of about 130/min and in a stable hemodynamic state. The patient was further diagnosed at the Cardiology Clinic with a 24/h Holter ECG, ECHO of the heart and laboratory findings including cardiac enzymes (troponins). Based on the results of this diagnosis, the patient was implanted with an ICD. One DC shock was delivered by the ICD during hospitalization. After about 10 days of admission, the patient was discharged from the Cardiology Clinic with further therapy suggested.
Discussion: Through the illustration of our case, we would like to point out the importance of a comprehensive physical examination with the use of available diagnostic procedures in the outpatient clinic (measurement of SpO2, glycemia, ECG) in all patients, especially in those with an unclear and/or non-specific clinical picture. The clinic of the Institute of Emergency Medicine in Nis has an average of about 200 examinations per 24 hours, and it takes a lot of effort to insist on a comprehensive examination of patients with such a large number of examinations, especially when anamnestic data are non-specific and present in a large number of patients, especially during viral infections . Given that practice has shown that patients often do not know how to adequately interpret their complaints, and that the first impression can be misleading, it is necessary for doctors in the outpatient clinic to measure vital parameters and perform an ECG on every patient with pronounced, but also unclear and non-specific complaints. Early recognition of VT, as well as other emergency conditions, can prevent a potentially fatal outcome for the patient.
Key words: Ventricular tachycardia, Amiodarone , ICD

WHEN AORTIC DISSECTION SHOULD BE SUSPECTED IN A PATIENT WITH NEUROLOGICAL DEFICIENCIES- A CASE REPORT

Milica Dinić
EMERGENCY MEDICAL SERVICE NIŠ

Introduction:Acute aortic dissection, "the most common of the catastrophic processes affecting the aorta", is a serious condition that requires urgent medical and surgical care. Acute aortic dissection(AAD)is a life-threatening cardiovascular disease, most common in people aged 65 to 75 years, with an incidence of 35 cases per 100,000 people per year. Aortic dissection is more common in

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX Year 2023, Suppl. 1

men. About 20% of patients with aortic dissection die before arriving at the hospital. If untreated, mortality is 1–3% in the first 24 hours, 30% in the first week, 80% in the second, and 90% within a year.
Case report:On June 14,2023, at 12:30 p.m., the team of the Emergency Medical Service Niš received a call as a second line of emergency, where the patient's family reported that a male person had a stroke,difficulty speaking, and before that he complained to his family of chest pain.The patient was found in the house, on the floor, in a conscious state. Pale discoloration of the skin and visible mucous membranes, difficult and slurred speech. The family states that two days earlier during the night he had chest pain when he consulted a cardiologist, who ruled out acute coronary syndrome. During examination, vital parameters: TA(left.arm): 70/40mmHg; TA (right.arm):immeasurable; SF:70/min; SpO2:94%; RF:16/min;Glycemia:6.2mmol/l;TT:36. ECG:sinus rhythm, without changes in QRS and ST segment. Findings by systems are in order. A neurological examination revealed weakness on the left side of the body. Opened i.v., included Ringer solution 500 ml and O2:2-3 l/min.Transported to the resuscitation department of the University Medical Center Niš, where an MSCT of the Aorta was performed as an additional diagnostic, where an aneurysm of the thoracic part of the aorta with dissection was visible, which apart from the thoracic procedure and the abdominal aorta - DeBakey type I/IIIb; Stanford A type. Due to poor general condition, the patient was intubated and placed on MV mode VC-AC FiO2 100%.CPR measures were taken, where despite all the measures taken, the recovery of spontaneous circulation didn't occur, after which the fatal outcome was determined.
Discussion:At first glance, the patient is presented with a clear picture of an acute stroke. Neurological deficit and state of consciousness are one of the possible presentations of aortic dissection when due to damage to the aortic wall and the formation of an intramural thrombus, the flow through the blood vessels of the neck decreases, which causes consequent brain ischemia. Suspicion of dyskinesia in our patient was aroused by information about chest pain from the previous day, which was accompanied by a regular ECG record.A careful clinical examination revealed other signs that pointed to AD (swollen neck veins, a clear change in skin color - cyanosis in the head area)and neck as well as data on previous hypertension and pain that migrated to the abdomen).
Conclusion:Aortic dissection must be suspected in any patient with chest or interscapular pain, unexplained syncope or abdominal pain, stroke, sudden circulatory disturbances, especially if pulses or pressures on the extremities are different.
Key words:Aortic dissection, Neurological deficiencies.

WHY IS A FULMINANT MYOCARDITIS AN EMEGRENCY NIGHTMARE?

Nikola Jovanović, Marija Andrejević, Karin Vasić, Bojko Bjelaković
UNIVERSITY CLINICAL CENTER NIŠ, PEDIATRIC CLINIC

Introduction: Fulminant myocarditis is an uncommon condition characterized by sudden and severe hemodynamic compromise secondary to myocardial inflammation, often presenting as cardiogenic shock, and preceded by viral illness. Pathophysiology may be divided in 1. Viral phase 2. Immune activation 3. Myopathy phase
Case report: A 7-year-old female, height and weight at 48th percentile, was admitted in the ICU after transport from secondary care due to signs of cardiovasculare collapse. On heart and lung auskultation gallop rhytm with no murmurs and diffuse lung crackles were evident. Vital signs: HR 192/min, BP 120/90 mmHg, RR 55/min, SaO2 49% (FiO2 47% by simple face mask). A prompt management with PPV and inotrope support was initiated.
Discussion: In a subset of patients with myocarditis, a begining of a disease is more acute, severe and therefore is defined as fulminant myocarditis. One study investigating predictors of mortality in pediatric patients with myocarditis concluded that 50% of those who died, had cardiac arrest within

the first 3 hours of hospitalization. Because it initially presents as shock, patients are usually treated broadly. Some of the symptoms at presentation may include: chest pain, respiratory distress, gallope rhythm (third or fourth heart sign), poor perfusion, hepatomegaly, pericardial friction rub. As in our case, there may be an anamnestic data about prior viral illness. Serial ECGs, tropoinins, BNP and NT-pro-BNP and echocardiography are usefull for follow-up. Endomyocardial biopsy is suggested for severe patients that require caheterization for another reason and are on ECMO. In all other, CMR is recomended for diagnosis. From this case, we could conclude that: 1. Fulminant myocarditis presenting in a pediatric patient requires immediate management; 2. Diagnosis must be made quickly, because it can mimic respiratory pathology as cardiogenic shock unexpected in in pediatric patients; 3. Procalcitonin may be considered as potential marker of cardiac failure.

Key words: troponin, shock, procalcitonin, child