UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Emergenze Chirurgiche

2627-2-I0202D126-I0202D040M

Aims

The course aims to provide students with the tools and knowledge needed to recognize warning signs in emergency situations requiring a surgical approach, manage clinical risk before and after surgery, and adapt their rehabilitation plan.
The skills provided should allow the student to identify "red flags" (warning signs). Know how to promptly detect clinical and behavioral signs of acute surgical urgency (e.g., acute abdomen, intestinal obstruction, acute hydrocephalus, ventriculoperitoneal diversion dysfunction) during the therapy session.
Recognize neurological and neurosurgical emergencies: Identify signs of acute intracranial hypertension or spinal cord compression in children with complex pathologies (e.g., infantile cerebral palsy, spina bifida).
In summary, the overall objective of the course is to transform the TNPEE into a "clinical sentinel" capable of ensuring the maximum safety of the frail child, modulating neuropsychomotor stimulation based on the restrictions and needs arising from a surgical insult, whether planned or emergency.

Contents

Recognize the main surgical emergency conditions and be able to identify them in clinical practice such as: acute abdomen, hemoperitoneum, gastrointestinal hemorrhages, aortic aneurysms and dissections, foreign body inhalation, head trauma and hypertensive pneumothorax in accordance with pediatric first aid protocols (PBLS): within the neuropsychomotor setting.

Detailed program

Early recognition of signs of acute abdominal distress during the rehabilitation session and behavioral changes in the nonverbal child.

The Acute Abdomen in Evolutionary Age: Definition, etiology and pathophysiology. Clinical differences between the newborn, the infant and the older child.
Peritonitis and Acute Appendicitis: Clinical evolution; recognition of signs of abdominal defense. The problem of children with Infantile Cerebral Palsy (PCI) or cognitive disability: the expression of atypical pain and late diagnosis.
Intestinal Occlusions: Congenital (malrotations, intestinal invagination) and acquired causes (post-operative adhesions, obstructive fecal impactions in the hypomobile child). Recognition of fecaloid vomiting, abdominal distension, and absence of canalization.
Intestinal Ischemia and Necrotizing Enterocolitis (NEC): Signs of abdominal septic/hypovolemic shock, lethargy, thermal instability.
Gastro-Enteric Hemorrhages: Hematemesis, melena, and rectorrhagia in children. Management of acute hypovolemia in rehabilitation settings and safety positioning.
Role of TNPEE: Immediate discontinuation of rehabilitation treatment, inconsolable crying on palpation/mobilization, management of appropriate posture while awaiting rescue.

Application of current international guidelines (ATLS/PALS) adapted to the child and management of post-traumatic disability.
Pathophysiology of Pediatric Trauma: Why the child is not a "little adult". Vulnerability of internal organs, skeletal flexibility and risk of occult injury (e.g. Sciwora - spinal cord injury without radiological abnormalities).
Primary and Secondary Evaluation according to Current Guidelines:
The ABCDE (Airway, Breathing, Circulation, Disability, Exposure) systematic approach.
Management and immobilization of the cervical spine in the child.
Thoracoabdominal Trauma: Seat belt injuries, crush injuries, splenic and liver injuries.
Role of TNPEE: Approach to children returning to the rehabilitation setting after multiple trauma; monitoring of long-term neurological and motor outcomes; psychomotor management of immobilization syndrome (deconditioning).

Acute hemodynamic and respiratory emergencies, with particular attention to genetic syndromes associated with vascular fragility and inhalation of foreign bodies during therapeutic play.
Aortic Aneurysms in Aortic Rupture and Dissections:
Clinical classification and etiology in pediatric and juvenile age (frequent association with connective diseases and genetic syndromes such as Marfan syndrome, Ehlers-Danlos syndrome, Loeys-Dietz syndrome).
Recognition of prodromal signs: acute chest or dorsal pain ("dagger stroke"), asymmetry of peripheral pulses, lightning-fast hemorrhagic shock.
Foreign Body Inhalation:
Pathophysiology of partial and total airway obstruction in children.
Real-time emergency management: Pediatric unblocking maneuvers (interscapular strikes and chest compressions in infants; Heimlich maneuver in children).
Prevention criteria and choice of therapeutic play material in neuropsychomotor setting.
Pneumothorax (PNX):
Spontaneous pneumothorax (frequent in long-term adolescents or those with chronic lung disease) and hypertensive PNX (absolute medical emergency).
Clinical signs: sudden onset dyspnea, chest pain, asymmetry of respiratory movements, cyanosis.

Assessment of state of consciousness, monitoring of neurological evolution and post-acute rehabilitation.
Cranial Trauma Classification: Minor, moderate, and severe cranial trauma. Mechanisms of primary and secondary damage (cerebral edema, ischemia).
Intracranial hematomas: Epidural, subdural hematoma and hemorrhagic cerebral contusions. The "glossy guilt" (free interval) in the epidural.
Assessment of Consciousness: Using the Pediatric Glasgow Coma Scale (pGCS).
Recognition of signs of Acute Endocranial Hypertension: Jet vomiting, severe headache, changes in pupil diameter (anisocoria), bradycardia and hypertension (Cushing's triad), lethargy or extreme irritability.
Role of TNPEE: Neuropsychomotor monitoring of the child in the months following trauma (assessment of executive functions, attention, motor coordination, and behavior); management of the child with outcomes of severe head trauma (vegetative state or minimal consciousness).

Safety of movement of the child carrying stable or temporary surgical devices.

The "Technologically Complex" Child: Guidelines for the safe movement during neuropsychomotor therapy of children carrying:
Ventriculoperitoneal (VPD) derivations for hydrocephalus (signs of valve malfunction/infection).
Tracheostomy cannula and PEG (Percutaneous Endoscopic Gastrostomy).
Orthopedic fixation systems (plasters, external fixators) or infusion baclofen pumps.
Relational and Ethical Aspects: Management of therapist stress in emergencies; effective communication with the family and interaction with the medical-surgical team (Pediatric Surgeon, Neurosurgeon, Resuscitator).

Prerequisites

Human anatomy concepts and first-year course objectives

Teaching form

delivery teaching

Textbook and teaching resource

The teaching material is provided entirely by the teacher, for further information:

- " Chirurgia d'urgenza e del trauma" Autori: Federico Coccolini, Massimo Chiarugi, Eugenio Cucinotta, Andrea Mingoli, Mauro Zago. Editore: libreriauniversitaria.it lingua: italiano anno di pubblicazione 2025 ISBN-10 8833597911

- "Emergenze ed urgenze medico - chirurgiche - Dal sintomo, alla diagnosi, alla terapia" Autori: Zagra,Pugliese Editore: Edra anno di pubblicazione 2020 Lingua: italiano ISBN:9788821450143

-"Textbook of Emergency General Surgery Traumatic and Non-traumatic Surgical Emergencies" Autori: Federico Coccolini
Fausto Catena Editore : Springer lingua: inglese anno di pubblicazione 2023 ISBN 978-3-031-22598-7

Semester

second semester 2° year of course

Assessment method

Written test: multiple choice quizzes and open-ended written questions

Office hours

The teacher receives by appointment by prior contact via institutional email "fabio.uggeri@unimib.it"

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING