

Unit 6

PAEDIATRIC EMERGENCIES

Paediatric cases are among the most common an emergency ambulance is called to partly because children are highly disease and accident prone and partly because parents are as a rule extremely sensitive about their children's health.

A. Warm-up

Working in pairs or threes answer the following questions:

1. What groups of paediatric patients could you distinguish?
2. What categories of paediatric patients' problems would you recognize?
3. What are the most common causes of an emergency ambulance being called to a paediatric patient?
4. What information should you collect from the patient, the patient's parents (guardians) or bystanders (witnesses)?
5. How should the rescuer approach the young patient?

Gather the information and pool together your knowledge to discuss the problem.

B. Case Studies

Follow and discuss the cases presented.

Case 1

Task 1

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Listen to the conversation between the caller (C) and the dispatcher (D). Decide whether the statements below are true (T) or false (F). Explain.

1. The victim is a cyclist.
2. He had a collision with a car in a busy street.
3. The victim is a teenager.
4. The cyclist was heavily injured.
5. There is no need for giving CPR.
6. There seem to be no adults present on the site of the accident.
7. The victim is conscious.
8. Despite minor injuries the boy sustained, he can move easily.
9. He is lying on his back and breathing irregularly.
10. He doesn't feel any pain.

Task 2

Pass the information on the casualty to the EMT to be sent to the site of the accident.

Task 3

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Listen and complete the conversation between the paramedics (P1, P2), the victim (V) and the witness (W).

P1: We're paramedics. What a place to have an accident!
.....?

scrape zadraśnięcie
scratch zadrapanie
concussion wstrząśnienie
bruise siniak, stłuczenie
adduction przywodzenie
flexion zgięcie
immune response reakcja
immunologiczna

W: He seems a bit better. He's breathing more regularly. He's also tried to move and asked for help.

P1: you're getting better.

V: Not really. Why must it hurt so much?

P1: Where you most?

V: My side, my right side, the hand and the leg. Can you help me move? Can you give me something to kill the pain? I'll never ride this stupid bike again!

P1: First we'll give you something to, then we'll take care of other things. Accidents like this happen, especially when it's so wet.

P2: I'm going to
It will hurt a little, I'm afraid. But it will hurt less in transport.

P1: How?

W: We were having a good ride, quite fast and bumpy, simply great. The ground is wet after yesterday's rain but we have brand new mountain bikes. We wanted to test them. We thought there was no risk. Will Ed be all right?

P1: He will but it'll take time.

P2: I've finished. (*to the victim*), was it?

V: No, if you say so.

P2: Now we'll and take you to the ambulance.

Task 4

Discuss how you would examine the victim, how you would proceed, what you need to help the victim. Say what complications you should be prepared for in an accident of this kind.

Task 5

Read the description of the casualty given below. Express your opinion on the statements given below.

The victim is an 11-year-old male after a cycling accident. He fell off the bicycle on his right side. He must have been riding quite fast because the impact was hard. He must have hit himself on the head because he seems to have been unconscious for a while. He may have suffered a concussion but he is now conscious and alert. His rate of breathing is accelerated. It is 24 breaths per minute. He has tachycardia. His systolic blood pressure is 95 mmHg. His pulse is 90/min. His pupils are within normal limits. There is an open fracture to the tibia and the fibula of the right extremity. The wrist of the right hand is swollen and reddened so we suspect fracture. The right side is bruised. There are numerous scrapes and scratches but no serious bleeding.

1. There is no need to take a CT of the victim's head.
2. The victim's respiration was seriously impaired.
3. Tachycardia is a sign that the victim's condition is life-threatening.
4. The appearance of the wrist indicated a possible fracture.
5. Absence of external bleeding in this case does not mean that there are no internal injuries.
6. The victim's head injury seems to be minor and temporary.
7. A concussion he suffered from didn't cause any permanent damage to his brain.
8. There was a brief loss of consciousness due to a hard impact.
9. The number of bruises, scrapes and scratches indicate external minor injuries.
10. The boy's vital signs are within normal limits as in minor cases.

Task 6

Give a face-to-face report to the doctor on duty upon arrival at the hospital, include:

- the actions you have taken on the way to the A&E department,
- the changes to the victim's vital signs and condition you may have registered.

Task 7

Make generalized comments on the case and discuss it as a typical case of the type. Point to typical mistakes which should be avoided.

Case 2

Task 8

Read and complete the conversation between the dispatcher (D) and the ambulance crew (AC). Use the words from the box.

way • unconscious • caller • closest • months • want • breathing • go

AC: Charlie three zero one to red base, over.

D: Charlie three zero one. I you to to 11 Oak Road, apartment 32. The 's name's Jackson. The victim is a 20 old boy after a fall from a table. He's but You are the to the place.

AC: Roger that. We are on our Over.

Task 9

Considering what you know about the case:

- Imagine what injuries the infant might have suffered, what equipment you might need.
- Imagine what questions you might want to ask the parent(s) or other witnesses.
- Imagine how you would be likely to proceed in the situation. Simulate it.
- Imagine giving a pre-alert call to an A&E unit. What would you tell them?

Task 10

The EMS assess the condition of a paediatric victim against the criteria of the Glasgow Coma Scale. What would the score be for the victims described below? Can you make a fast assessment?

- a. He opens eyes in response to voice but he utters only incomprehensible sounds. On palpation withdrawal can be observed when the area is tender.
- b. He opens eyes when a painful area is palpated. He is confused and disoriented. Painful stimuli trigger abnormal flexion.
- c. He opens eyes spontaneously. He can communicate normally and is oriented as to place and person. He can point to painful areas.
- d. The victim responds to pressure on his fingernail bed. No verbal exchange but the victim utters single words. Extension to pain is present, including internal rotation of the left shoulder and adduction of the left arm.
- e. The victim does not open his eyes. He moans occasionally. He shows no motor response.

Task 11

Read and complete the pre-alert call of the ambulance crew to the A&E department. Use the words and phrases from the box.

no fractures • left • right • tenderness • equally audible •
20 months • bradycardia • normal • 60 • unconscious • patent
• 100/65 • costal area • 9 • no • unconscious • collapsed • shallow
• sensation • scrapes • bruises • movement • 60 • cervical • slow •
pulse • movement • bruising • IV line

We are coming in to you with a old boy with recent and old and, also on the face and head. He is He doesn't move. His respiration is and but his airways are The taken on the radial artery is We started ventilation using a BVM unit. veins are but there is evident neck deformity. The area is tender to palpation. On auscultation breath sounds are on both sides. Heart sounds are/min. There are to the extremities or the pelvis. Peripheral pulse is normal. No impairment of or is present. There are numerous areas of and on the boy's body. His BP is mmHg, respirations/min, pulse/min. His GCS is We have established an and begun infusion of fluids. ECG shows sinus Pupils show normal reaction to light. The pupil is slightly larger than the one.

Task 12

Analyse the information given. Is there any information that is missing or redundant? What can you tell about the cause and the severity of the infant's condition?

Case 3

Task 13

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Listen and complete the dialogue between the dispatcher (D) and the caller (C).

C: Emergency? I'm John Case. I'm calling from
We've just had an accident with hot milk. My daughter and wife have They are in

D: Where are the burns?

C: On their and The skin is all and there.

D: Have you cooled the area with cold water?

C: Yes. My wife's doing it but it's

D: How old is your daughter?

C: She's She's all red in the face with and We can't calm her down. She's on her tears and screaming.

D: Keep trying. We're sending an ambulance round.

Task 14

Pass the information on to the ambulance crew to be sent to the site.

Task 15

Think how you would proceed, what equipment and medications you might need in this case.

Task 16

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Listen to the conversation between the rescuer and the girl's father. Decide whether the statements below are true or are likely to prove true.

1. The rescuer is right to take care of the girl first.
2. The rescuer tries to establish communication with the girl because she can be a good source of information.
3. The details of the MOI are not fully known but it does not matter in this case.
4. The parents were right in their attempt to help the girl.
5. The administration of medications was justified.
6. The rescuer should not have bothered to give an extensive evaluation of the situation to the girl's father.
7. There was real concern on the part of the father.
8. The parents shouldn't attempt first-aid procedures.
9. There was no need taking both the girl and her mother to hospital.
10. Paramedics assessed the burns as life-threatening.
11. There was need to remove clothes from the affected areas.

Task 17

Imagine what other information the rescuer should have collected, what questions he should have asked. Simulate such a conversation.

Task 18

Read the text of a pre-alert call to the A&D department made by an ambulance crew. Answer the questions below.

AC. We are coming in to you with a five-year-old girl with second-degree burns to her upper and lower extremity due to spilled hot milk. The skin on the extremities is red,

swollen, blotchy and blistered. A few blisters have already broken and a fluid is coming out. I estimate the burn at approximately 10% of the body area. The girl is hysterical. She has tachycardia and tachypnoea. We have administered IV analgesics and tranquillizers to reduce the pain and calm her down. We have also dressed the burned area to prevent infection. There is no history of any chronic diseases, recent diseases or allergies. Her mother is with us. She also sustained second-degree burns to her thigh and foot but they are not extensive.

1. How old is the victim?
2. How severe are the burns she suffered from?
3. Which areas of the girl's body were affected?
4. What does the skin on the affected areas look like?
5. Is there a danger of an infection in the area? Why?
6. Why is the burn assessed to be extensive?
7. Does the victim have any serious cardiac or respiratory problems?
8. Why was she administered analgesics and tranquillizers?
9. Why was the burnt area dressed?
10. Is there anything remarkable in the victim's medical history?
11. Was the girl the only person affected by the accident?

Task 19

Recap the information without looking at the text.

Case 4

Read the description of an 8-year-old girl who sustained acute asthmatic attack. Try to obtain a brief history of this girl from her mother. Reproduce the questions you asked.

An 8-year-old girl woke up coughing with a marked wheeze. Her mother administered 6 puffs of salbutamol via the spacer and her wheezes have settled however she never completely responded to therapy. After a couple of hours her wheezing became more pronounced. She couldn't speak more than a few words, couldn't stop coughing and became drowsy. Her mother recognised that she was becoming increasingly unwell and called EMS. On arrival the ambulance staff finds a girl rather agitated and difficulty breathing. She appears to be bluish around her lips and has an audible wheeze. She is rapidly administered oxygen via a mask. She has a number of features indicating a life-threatening exacerbation of asthma. She is drowsy, too breathless to speak and appears to have central cyanosis. Paramedics recognise a life-threatening asthma attack and arrange urgent transport to hospital. Upon arrival to hospital she is still cyanosed which suggests significant hypoxia and her vitals reveal tachycardia PR: 180 bpm and oxygen saturation of 92% despite high-flow oxygen; RR: 50 breaths/min; Temp. 37.7 degrees C. The rescue team is being prepared to intubate her and initiate mechanical ventilation just in case her condition deteriorates. Meanwhile she is administered high-flow oxygen by mask and salbutamol constantly delivered by a nebuliser.

Intravenous access has been obtained so that IV medications and fluids can be administered.

Although she remains agitated, tachycardic and tachypnoeic, indicative of severely reduced ventilatory capacity, she is able to maintain her conscious state. The girl responded well to therapy and was able to be weaned off the salbutamol infusion after two-day hospitalization treatment.

Task 20

Try to obtain a brief history of this girl from her mother. Reproduce the questions you asked.

P:

M: My daughter was diagnosed with asthma when she was 4.

P:

M: She would get wheezy and breathless whenever she developed an upper respiratory tract infection.

P:

M: She has had a dry cough and a sore throat for the last two days.

P:

M: She awoke a number of times throughout the night panting for breath, coughing and wheezing.

P:

M: Yes. I gave her 6 puffs of salbutamol via the spacer every 2 hours.

P:

M: No. Suddenly her wheezing became worse.

P:

M: No. She couldn't stop coughing.

P:

M: She was able to utter a few words at a time.

P:

M: Yes. She had 37.7 degrees C.

P:

M: Yes, she was. But sometimes she became a bit drowsy.

drool ślinić się
blotch rumieniowa plama na
skórze

Task 31

What medical emergencies may generate the following symptoms in children?

1. The victim's eyes roll up, his/her body stiffens and there is some kind of rhythmic shaking often accompanied by drooling or excessive saliva.
2. The child is giddy, lethargic and weak, unable to ingest any food or drink fluids. He/she has often dry mouth and lips and refuses to go pee.
3. The victim suffers from severe persistent headache associated with fever and neck stiffness or pain.
4. The victim's arm has come out of socket and hurts so much that the child is unable to use it.
5. The child complains of severe pain in the right lower abdomen often accompanied by fever, vomiting, diarrhoea or constipation and loss of appetite.
6. A 2-year-old is walking funny and acting 'drunk' or just out-and-out unconscious.
7. A 6-year-old awoke in the middle of the night, itchy and uneasy. His body was covered with huge red blotches and purplish tinged black and blue marks.
8. The little boy sustained an obvious blow to the eye, surrounding area is reddened, swollen and bruised. He is reluctant to open the affected eye and feels something that irritates him when he winks.
9. There is smelly, blood-stained, mucous-like secretions visible in the ears or nose.
10. The child shows irritability, lethargy, increased thirst. There is a history of poor immune response, weight loss and frequent urination or bedwetting. You can easily recognise a fruity smell on his/her breath.

Task 32

Match the following symptoms and signs (a-j) with appropriate medical paediatric emergencies (1-10).

- a) blotchy, itchy rash, paleness and sweating, anxiety, swollen eyelids, lips and tongue, puffy face and neck, refusal to drink and dribbling
- b) rigid spasm during which the child usually falls unconscious to the floor and breathing becomes irregular, jerky movements of the limbs and face, loss of bladder or bowel control
- c) a bulging fontanel, the so-called 'soft spot' on the front of the head, vomiting, tiny blotches of purple-red rash, fever, drowsiness, confusion, stiff neck, headache
- d) persistent cough, laboured breathing, feeling of suffocation, wheezing, difficulty in speaking, disturbed sleep
- e) barking, seal-like coughing bouts with difficulty breathing, inspiratory noisy stridor, muffled 'hot potato' voice, low-grade fever
- f) redness of the white of the eye and inside of the eyelid, itchiness and irritation of the eye, a clear not sticky discharge from the eye
- g) an infant is febrile, lethargic, nauseated, perks up after the fluid bolus, irritable, crying, vomiting, has diarrhoea and constantly damp diapers
- h) an infant is aroused spontaneously via tactile stimulation, suffers from brief periods of apnoea, cyanosis and LOC
- i) an infant remains unresponsive despite CPR, there are no VS and there is asystole on monitor
- j) there is no spontaneous respiration for more than 20 seconds

- | | |
|-----------------------|-----------------------------|
| 1. epilepsy | 7. SIDS |
| 2. anaphylactic shock | 8. ALTE |
| 3. meningitis | 9. dehydration |
| 4. croup | 10. allergic conjunctivitis |
| 5. asthma | or 'pink eye' |
| 6. apnea | |

D. Follow-up

1. Prepare a set of rules to be followed by rescuers called to paediatric emergencies. Explain their rationale.
2. Prepare a list of equipment, materials, drugs, etc. to be most useful in paediatric emergencies. Explain their rationale.
3. Prepare a presentation on approach to handling paediatric emergencies.
4. In groups prepare simulations of paediatric emergencies related actions.

Unit 7

MASS-CASUALTY INCIDENTS

A. Warm-up

The growing number of people and their ever more common and ever faster movement, the density of urban ~~population~~ and the lifestyle which entails large groups of people gathering in public places, factors of cultural, religious, social, economic and political nature generate mass-casualty incidents which are not caused by natural disasters such as earthquakes, fires or floods or military conflicts.

Working in pairs or threes answer the following questions:

1. How would you define a mass-casualty incident?
2. What man caused mass-casualty incidents are most common in your country?
3. What mass-casualty incidents may be expected to become more common in the years to come?
4. How should the EMS system and its participants prepare to handle mass-casualty incidents?
5. Do mass-casualty incidents require any particular skills and personality features on the part of the paramedics involved?

mass casualty incident incydent,
zajście, zdarzenie, katastrofa
z dużą liczbą ofiar