



DOI: 10.5859/2456-8287/nairjc_00005.52

EMERGENCY CARE AND FIRST AID

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ABSTRACT

Emergencies always strike suddenly, without warning. One moment everything is fine; the next, someone is involved in a serious accident. Victims include all ages, from tiny children to elderly folk. Cuts, bruises, lacerations, fractures, bites, stings, fainting spell etc. Are common amid all the bustling activity of life. Emergencies are likely to occur at any time, and one of your loved ones may be involved. What you do or fail to do promptly may make a great deal of difference between a quick recovery and a prolonged illness, perhaps even death.

KEYWORDS: *Emergency, Care, First Aid*

INTRODUCTION

First aid is the initial help given to an injured or a sick person before professional care can be provided. Timely assistance is most critical to the victims and is, often, lifesaving. Any layperson can be trained to provide first aid, which can be carried out using minimal equipment's. Basic training in first aid skills should be taught in schools, colleges and in work places. In general, first aid skills should be learnt by all.

BASIC LIFE SUPPORT (BLS)

Basic life support is one of the most important first aid skills, the steps which have to be familiar to all and is described below.

On seeing a sick or injured person, check if the person is responsive by tapping him on the shoulder and shouting at him. If the person also has absent or abnormal breathing (i.e., only gasping), the rescuer should assume the victim is in cardiac arrest. If the victim is in cardiac arrest, immediately call for help towards taking the person to the nearest hospital.

Check for pulse in the neck (one should not search for more than 10 seconds for the same). If no definite pulse is felt, start CPR (Cardio Pulmonary Resuscitation). It can be done as described below.

Chest compressions at the rate of 100/minute is to be given at the lower half of the sternum (breastbone) with a compression depth of 5 cm. After giving 30 compressions, the victim should be given 2 rescue breaths via mouth to mouth breathing. Start chest compressions again at the same rate mentioned above and repeat cycles of 30 chest compressions and 2 rescue breaths. This should be continued till CPR is taken over by an expert medical team at the site of the accident or at a hospital.

If pulsations are felt in the neck, but the victim is not breathing, provide mouth to mouth rescue breaths at the rate of 1 breath every 5-6 seconds or 10-12 breaths every minute.

ANAPHYLAXIS

Anaphylaxis is a life threatening allergic reaction. Manifestations include dizziness, fainting, weak pulse, swelling of face and lips, itching, red rashes in the skin, wheezing, breathing difficulty etc. Common causes include bee or wasp stings, medications, certain foods like seafood, peanuts etc.

Have the victim lie still. Clothing should be loosened. If there is vomiting, turn the person to his or her side so as to prevent choking. If the victim is unresponsive, perform BLS. Arrange to take him or her to a hospital as soon as possible.

ANIMAL BITES

Bites, both from domestic and stray dogs are common in India. Other animals include cats, rats, monkeys etc. Wounds can range from small skin breaks to large cut wounds. The victim should be calmed. The wound should be washed with soap and running water. Antibiotic ointment if available should be applied. The wound should be dressed with sterile bandage or a clean cloth. Bleeding wounds should be tightly dressed, so as to prevent further bleeding. After first aid, medical treatment should be sought quickly.

BURNS

Severity of burns is based on the depth and the extent of involvement. Burns are classified into first degree, second degree and third degree based on the depth of skin involvement.

First degree burns involve only the outer layer of the skin. The skin appears red and swollen. The victim will be in pain. Second degree burns involve the second layer of the skin (called dermis) in addition to the first layer. In addition to pain, redness and swelling, there will be blisters also. Third degree burns involve all layers of skin and may also involve underlying structures like fat, muscle and even bone. The affected areas will appear charred black or even dry and white. The victim may have difficulty breathing due to burns involving the airways.

Assessing the extent of burns is important in determining the severity of the burns. Burns involving small areas less than around 8 cm and first or second degree in depth can be treated as minor burns. Burns with depth and extent more than as described above should be treated as major burns.

Minor burns can be treated by keeping the involved area under cool running water for 10-15 minutes. Clean cloth dipped in cold water can also be placed over the area involved if the above is difficult. Cover the area with a clean bandage if available. Simple analgesics like paracetamol or ibuprofen can be given to the victim if pain is present.

For major burns, do not remove the burned clothing. Cover the involved areas with moist cloth, towels, or sterile bandages. Raise the burned parts of the body above the heart level if possible. If unresponsive, provide basic life support. Arrange to take the victim to a hospital as soon as possible.

CHEST PAIN

Chest pain is a common problem. It can be caused by minor problems such as acidity, costochondritis, stress etc as well as serious problems such as a heart attack, pulmonary embolism, aortic dissection etc. Finding the true cause of the chest pain is not easy.

If a person has unexplained chest pain lasting more than a few minutes, it is better to seek assistance from a medical professional. Find out if the person has any underlying heart problems and has been advised medicines for chest pain. Advise him or her, to take the same. Make arrangements to take the person to a hospital quickly.

CHOKING

Choking occurs when a foreign object gets stuck in the throat. The common cause is food especially meat pieces. This results in blocking the flow of air. It could be fatal if first aid is not administered immediately.

The most common sign of choking is hands clutched to the throat. Other manifestations include inability to talk, breathing difficulty, noisy breathing, loss of consciousness, skin turning blue etc.

Five and five approach needs to be followed to provide first aid. It consists of alternating five back blows and 5 abdominal thrusts. Five blows have to be delivered between the person's shoulder blades with the heel of the rescuer's hand. Subsequently five abdominal thrusts (also known as Heimlich manoeuvre) have to be provided. The rescuer must stand behind the victim and wrap his or her arms around the waist of the victim. Subsequently the victim has to be tipped forwards. The rescuer must then make a fist with one hand and position it slightly above the victim's navel. He or she should then grasp the fist with the other hand and press hard into the abdomen and provide a quick upward thrust as if he or she is trying to lift up the person. A total of five abdominal thrusts have to be provided. If the blockage hasn't been dislodged, five and five cycles of back blows and abdominal thrusts must be repeated.

CUTS

Assess the wound to see how big it is. Minor cuts and scrapes do not require a visit to a Doctor. Still, it has to be attended to with proper care to avoid infections and other complications.

Bleeding from minor wounds usually stops on its own. If it does not, apply gentle pressure with a clean cloth or bandage. Pressure can be held continuously for up to 20-30 minutes. If possible, elevate the wound. If there is spurting of blood or continuous flow even after applying pressure as mentioned above, medical assistance has to be sought.

The wound has to be cleaned by rinsing with clear water. Use soap around the wound. If dirt is present in the wound even after rinsing the same, gently remove the dirt with forceps which has been cleaned with alcohol. Apply an antibiotic ointment after cleansing. Cover the wound with a sterile bandage. Change the dressing at least once daily or earlier if the wound gets wet or dirty. If the wound is not healing or there is redness, increasing pain, wetness, warmth or swelling, there is high likelihood of infection. In such situations, medical assistance has to be sought.

Wounds more than 5 mm deep or is gaping require stitches. Hence the same has to be shown to a Doctor. If the person with the wound has not had tetanus immunization within the past 10 years, the same has to be taken.

DISLOCATION

Dislocation is the condition, where the ends of bones get dislodged from their normal positions in joints. It usually occurs due to falls, motor vehicle accidents etc. The most common site of dislocation in adults is the shoulder joint. In children, it is the elbow joint.

If a joint dislocation occurs, prompt medical attention is needed. While medical attention is being sought, the affected joint has to be splinted in its normal position, so as to prevent movement. Splinting can be done with a folded newspaper, folded blanket, folded magazine, folded cardboard box etc. Movement can result in damage to the joint and adjacent tissues. Ice can be put on the injured joint, which can reduce swelling and pain.

ELECTRICAL SHOCK

Electrical shock can result in numbness and tingling, burns, muscle pain and contractures, heart rhythm problems, cardiac arrest, seizures etc.

Carefully inspect the victim without touching him or her as the person might still be in contact with the electrical source. Turn off the source of electricity. If the victim is unresponsive, provide basic life support. Shift the person a nearby hospital for further evaluation.

FOREIGN BODY IN THE EAR

Foreign objects in the ear causes pain. Do not attempt to remove the object with cotton swab or matchstick. This can cause the object to move farther into the ear and damage the fragile structures inside the ear. If the object is clearly visible, it can be removed using a forceps. The head can be tilted to the affected side to see if the object will fall off.

If the foreign body is an insect, tilt the person's head, so that the ear with the insect will be facing upwards. Warm, but not hot oil, like coconut oil, baby oil etc can be poured into the ear. This is done to float the insect. If there is bleeding or discharge from the ear, do not attempt this. If this does not help, seek medical aid.

FOREIGN BODY IN THE EYE

Keep the affected person seated in a well-lit area. After washing of hands, gently examine the eye to find the object. The lower eye lid can be pulled down and the person asked to look up. Subsequently the upper eye lid has to be pulled up and the person asked to look down. If the object is found floating in the tear film on the surface of the eye, it can be attempted to be flushed out using lukewarm water. One should be careful, not to rub the eye or attempt to remove an object embedded in the eyeball. Seek help from a doctor if, the object cannot be removed, there is abnormal vision or pain, there is redness or if there is a sensation of an object in the eye persisting even after the foreign body is removed.

FOREIGN BODY IN THE NOSE

Ask the person to blow the nose gently to free the object from the nose. If only one nostril is affected, the opposite nostril can be closed by applying gentle pressure and then blowing gently through the affected nostril. If the object is visible, gently remove it with a forceps. Seek medical help, if these measures are unsuccessful.

FRACTURE

A fracture is a broken bone. There will be pain, deformity and inability to move the affected area. Any bleeding has to be stopped by applying pressure with a sterile bandage or a clean cloth. Immobilize the fractured area with a splint (folded newspaper, cardboard, magazine, folded blanket etc). Application of ice packs will help in reducing the swelling and in relieving pain. Look for shock and provide first aid for the same. If unresponsive, provide basic life support. Arrange to take the victim to a hospital.

GASTROENTERITIS

Gastroenteritis is the condition in which there is inflammation of the stomach and intestines. Causes include infection with viruses, bacteria, parasites; certain medications; reaction to certain foods.

Manifestations of gastroenteritis include vomiting, diarrhoea, cramping abdominal pain, fever etc.

Plenty of fluids are to be taken to make up for dehydration and ongoing losses. Oral rehydration solution diluted as per instructions in the packet, rice kanji water with salt, coconut water etc is advised. It is advised to take these fluids frequently so as to pass light coloured urine. Only simple diet preferably fruits, rice kanji, bread, vegetable dishes with minimal spices and masala etc should be consumed. Adequate rest is advised.

If recurrent vomiting, persisting diarrhoea more than 2 days, decreased or absent urine output, high grade fever, severe abdominal pain etc occurs, medical help has to be quickly sought.

HEADACHE

Headaches are a common problem. Most of them are due to minor causes. However, there are also serious causes of headache. Watch out for alarm symptoms or characteristics of headache, which will pinpoint to a more serious cause warranting further evaluation. They include vomiting, drowsiness, weakness or paraesthesia's in the limbs, reddened eye, etc. Sudden onset severe headache, steadily worsening headache, worst headache to have occurred till date, different type of headache than the usual, headache with fever, headache after a head injury are also descriptions or situations which warrant further evaluation. In such cases medical attention has to be sought.

In the absence of the above mentioned alarm features, the person can be given analgesics like paracetamol or ibuprofen. He or she can be advised to take rest.

HEAD INJURY

Most injuries to the head are minor and do not require hospitalization. However symptoms and signs such as severe head or facial bleeding; bleeding or leaking of fluid from the ears or nose, drowsiness or coma; black or blue discolouration around the eyes or behind the ears; slurred speech, weakness in limbs, imbalance while walking; seizures etc are suggestive of serious head injury and would warrant urgent medical intervention.

If there is severe head trauma, keep the person still. Stop bleeding by applying firm pressure on the wound with a sterile gauze or clean cloth. If unresponsive, provide basic life support. Arrange to take the person to a hospital quickly.

HEAT CRAMPS, HEAT EXHAUSTION AND HEATSTROKE

Heat cramps are painful and involuntary muscle spasms that occur after heavy exercise or working in hot and humid environments. Lack of adequate fluid intake is often a precipitating factor. The cramps usually involve muscles in the calves, arms, abdomen, and back.

Heat exhaustion is a heat related condition worse than heat cramps. There is in addition to the cramps, nausea, feeling faint, fatigue, rapid heartbeat, headache, low grade fever, heavy sweating, dark coloured urine etc.

Heatstroke is the worst heat related condition. In addition to cramps and other symptoms mentioned above, there is cessation of sweating, worsening drowsiness to coma, higher body temperature and low or elevated blood pressure.

In case of heat cramps, the person is advised to drink clear water with a pinch of salt added, fruit juice, or electrolyte containing sports drinks.

Gentle stretching and massage of the affected muscles can be done. Avoid strenuous activities for a day. If the cramps persist, seek medical attention.

In case of heat exhaustion or heatstroke, quickly get the person out of the sun into a cool room. Lay him or her down. Loosen or remove the person's clothing. Cool him or her by spraying with cool water and fanning. Cool water or other beverages as mentioned above can be given for drinking. Take the person to a hospital promptly.

INSECT BITES AND STINGS

Insect bites and stings cause itching, pain and sometimes anaphylaxis. Move the person to a safe area to avoid further stings. The stinger if stuck in the skin has to be removed with a sterile blade to prevent further envenomation. Wash the area with soap and water and apply a cold pack (ice with cloth wrapped around) to reduce the swelling and pain. Simple analgesics like paracetamol or ibuprofen can be used. Anti-allergens like cetirizine can also be used.

If severe reaction occurs with manifestations like breathing difficulty, swelling of face or lips, fainting, arrange to take the person to a hospital immediately. Provide basic life support if the person is unresponsive.

NOSEBLEEDS

Nosebleeds are a common problem. Make the person sit upright and leaning forward, which will reduce the pressure in the veins of the nose decreasing further bleeding. The nose should be pinched between the thumb and the index finger to keep the nostrils shut. Ask the person to breathe through his or her mouth. Ask the person not to pick or blow the nose and also not to bend down for several hours after the bleeding episode. If the bleeding lasts more than 20 minutes, recurs or occurs after a head injury, seek medical help.

POISONINGS

Signs of poisoning include vomiting, breathing difficulty, drowsiness, unresponsiveness; empty medication bottles or scattered pills lying beside the victim; chemical smell in the breath; burns or redness around the mouth etc.

If the victim has been exposed to poisonous fumes, shift him to fresh air quickly. If there is any poison in the mouth, remove it. If the poison has spilled on the person's clothing remove the same. Flush the skin or eyes with cool water. If the person is unresponsive, provide basic life support. Arrange to shift him or her to a hospital quickly. If any medication containers/strips or poison bottle is lying beside the patient, take it to the hospital.

SNAKE BITES

Immobilize the bitten arm or leg of the victim and position in such a way that the bitten area is below the level of the heart. Ask the victim to remain calm and quiet. This will help in reducing the amount of poison spreading to other parts of the body. Cleanse the wound with water. Avoid flushing water with force on to the wound. Apply a splint to reduce movement of the limb. The splint should be loose enough so as to not restrict blood flow. Tourniquet should not be used. Also avoid cutting the wound or attempting to remove the venom. Shift the victim to nearest hospital for further management.

SEVERE BLEEDING

Make the person to lie down and avoid movement. Wear a pair of gloves and remove any dirt if present from the wound. Put a sterile bandage or clean cloth over the wound and apply pressure directly on the wound till the bleeding stops.

If the bleeding does not stop with direct pressure, pressure has to be applied to the artery providing blood to the bleeding area. Points where such pressure has to be applied on the arm, are the inside of the arm just above the elbow and just below the armpit. Pressure points of the leg are just behind the knee and in the groin. The main arteries in these areas have to be squeezed against the bone. The fingers have to be kept flat and with the other hand continuous pressure has to be exerted on the wound itself.

Once the bleeding has stopped immobilize the victim. Arrange to take him or her quickly to a hospital.

SPRAIN

Ligaments are tough elastic like bands, which connect bones in joints and keep them in place. Sprain is an injury to ligaments, which can cause joint instabilities. Knee and ankle sprains are most common. There will pain, redness, swelling and instability in joint movement if the sprain is a major one.

Treatment can be remembered with the mnemonic R.I.C.E., which stands for Rest the injured limb, Ice the area, Compress the area with a bandage and Elevate the area above the level of the heart. Seek medical attention after providing the above.

SUNBURN

Manifestations of sunburn include pain, redness, swelling and occasional blistering. If large areas of the skin are involved, there can also be headache, fever and fatigue. Advise the person to take a cool bath. Moisturizing cream has to be applied to the affected areas several times a day. Blisters have to be left intact to speed healing and avoid infections. If they burst on their own, antibacterial ointment has to be applied on the open areas. Pain relieving medications like paracetamol or ibuprofen can be used. If the sunburn begins to blister or if fever occurs, it is advisable to see a doctor.

SHOCK

Shock can occur due to trauma, heatstroke, blood loss, allergic reactions, poisoning, severe infections, severe burns etc. When a person is in shock, there is inadequate blood supply to his or her organs. If untreated, this can lead to death. Manifestations of shock include drowsiness, rapid breathing, cool clammy skin, weak pulse etc.

Keep the person in his or her back with feet about a foot higher than the head level. Keep the person still. Keep him or her comfortable and warm, by covering with a blanket. Do not give anything by mouth. If vomiting occurs, turn him or her to the sides. If there is bleeding, apply pressure to stop the same. Shift him or her to a hospital quickly.