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Diploma in Pharmacy 1st Year
Social Pharmacy
Experiment

To practice BSL (Basic life support) systems, (SCA-Sudden Cardiac arrest, FBAO- Foreign body Airway obstruction, CPR, Defibrillation (using AED) (includes CPR, techniques, first responder).

Aim:

To practice BSL (Basic life support) systems, (SCA-Sudden Cardiac arrest, FBAO- Foreign body Airway obstruction, CPR, Defibrillation (using AED) (includes CPR, techniques, first responder).

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Dr. Sharma Anshu , " Practical Manual of Social Pharmacy " Published by Nirali Prakashan , Pg.No 39 - 42

Theory :

BSL (Basic Life Support) Systems

Basic Life Support (BLS) system includes a series of treatments for maintaining systemic circulation and respiration in the victim. This system includes defibrillation with an Automated External Defibrillator (AED), Cardiopulmonary resuscitation (CPR) with chest compressions and rescue respiration that a normal layman person can immediately perform. BLS is also considered to play an important role in survival of neurologically intact victim. The important guidelines of BSL (Basic Life Support) Systems include :

1. Any untrained participant must first call the emergency help number (119) and get instructions from the Emergency Medical Services (EMS) dispatchers. It is however, suggested that dispatchers must provide only compression- cardiopulmonary resuscitation instructions to untrained rescuers on telephone.

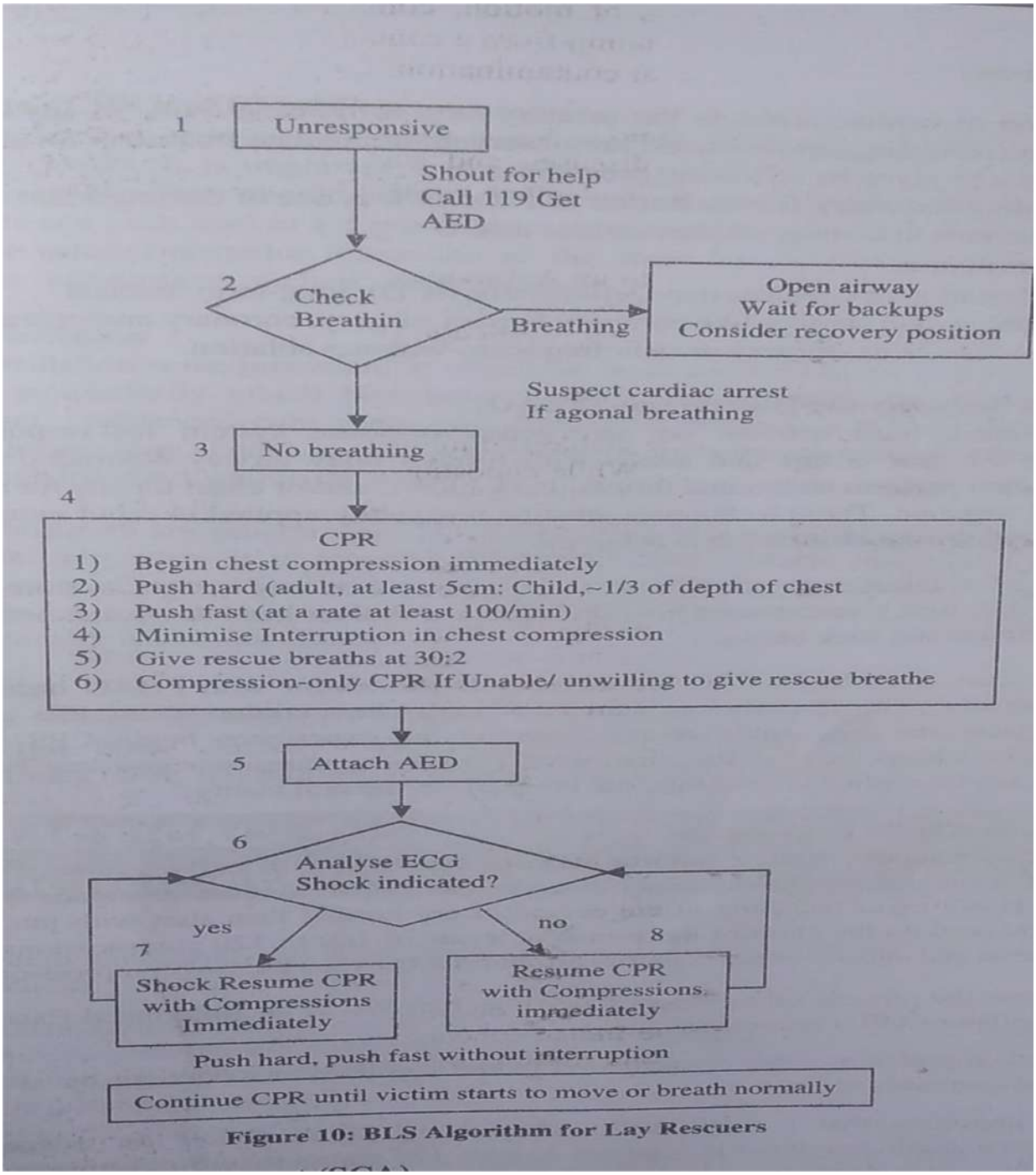

Figure 10: BLS Algorithm for Lay Rescuers

2. Rescuers must immediately start CPR in case the victim is unresponsive without any breathe or with agonal respirations. Agonal respiration indicates an abnormal breathing that recommends cardiac arrest.
3. The rescuer must immediately start chest compressions before rescue breathing and airway opening after the recognition of cardiac arrest.

4. All trained or untrained personnel must provide chest compressions to the cardiac arrest victim.
5. The requirement for high-quality CPR is once again highlighted. Chest compressions must be given by the rescuer at a rate of at least 100 times per minute and up to a depth of at least 5cm.
6. It is suggested that the trained rescuer must provide CPR with compression to ventilation at the ratio of 30:2.

Sudden Cardiac Arrest (SCA)

A condition of extreme and sudden medical emergency where the functioning of the heart stops and the person becomes unconsciousness with loss of breathing is known as cardiac arrest.
However, the heart of a person stops pumping blood due to drowning, heart attack, electric shock or any other medical problems.
Prevention of cardiac arrest is the primary step in treating SCA. If any of the symptoms indicating cardiac arrest are observed, immediate treatment for cardiac arrest must be given by following procedures :

i. Cardiopulmonary Resuscitation (CPR) : CPR is one of the important procedures in treating sudden cardiac arrest.
ii. Defibrillation.
iii. Implantation of Cardioverter-Defibrillator (ICD), long-term medical treatment, and surgery like coronary bypass surgery, coronary angioplasty, corrective heart-surgery or radiofrequency catheter ablation.

Foreign Body Airway Obstruction (FBAO)

The rescuers must activate the emergency response system for responsive children >1 year of age and adults with foreign body airway obstruction and should then perform abdominal thrusts, back blows, and/or chest thrusts for relief from obstruction. These techniques must be repeatedly applied in rapid sequence till the relief from obstruction is achieved.

In case, the infants are not able to make effective, strong cough, but are still responsive, then rescuers must hold the infants with their head down and perform chest thrusts and back blows.

The rescuer must begin CPR immediately if the victim with FBAO becomes unresponsive. The rescuers can start CPR with chest compressions like usual CPR. However, the healthcare providers having experience begin CPR with rescue breathing. In case the victims of FBAO are unresponsive, then finger sweep can be applied if solid material is visible in the oral cavity.

CPR and Chest Compressions

For treating sudden cardiac arrest direct CPR should be provided as primary step. A proper flow of oxygen-rich blood must be maintained to the vital organs of the body. However, if breathing of the person in not normal then start with pushing fast and hard on the chest of the person at a rate of 100 to 120 compressions per minute so that the chest rises completely and fully between the two compressions.

Continue the process till emergency personnel arrives or an Automated External Defibrillator (AED) becomes available.

Chest compressions must be provided to the cardiac arrest victims by all the trained or untrained rescuers.

It is important that a high quality chest compression should be delivered. Rescuers should compress at a rate of at least 100 compressions per minute and push hard to a depth of at least 5 cm (or 2 inches) for adult, one-third of the anterior-posterior dimension of the chest for children and infants, and reduce interruptions of chest compressions.

Initial Sequence of CPR

Instead of opening the airway and giving rescue breathings, rescuers start CPR with chest compressions.

Starting CPR and Chest Compressions

All trained or untrained rescuers must provide chest compressions to cardiac arrest victims. It is important that a high quality chest compression should be delivered. Rescuers should compress at a rate of at least 100 compressions per minute and push hard to a depth of at least 5 cm (or 2 inches) for adult, one-third of the anterior-posterior dimension of the chest for children and infants, and reduce interruptions of chest compressions.

Defibrillation

Defibrillation is the procedure in which the heart and the chaotic rhythm of heart stop momentarily which however often helps in resuming the normal heart rhythm. Advanced care ventricular fibrillation which is a type of arrhythmia which can cause sudden cardiac arrest, usually includes electrical shock delivery through the chest wall to the heart.

Defibrillators are programmed to identify the ventricular fibrillation and send a shock only when it is required. However, these portable defibrillators, like, Automated External Defibrillator (AEDs), are gradually more available in public places, such as casinos, airports, health clubs, shopping malls, and centers of community and senior citizen.

Result : BSL (Basic life support) systems, (SCA-Sudden Cardiac arrest, FBAO-Foreign body Airway obstruction, CPR, Defibrillation (using AED) (includes CPR, techniques, first responder) was practiced.

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