The ABCDE approach is a systematic approach that is applicable to all emergency cases and is useful in the immediate assessment and management of trauma and critically ill patients. High-quality ABCDE skills are required for healthcare professionals and their team members to save valuable time and team performance to tackle causality. Gain an overview of the initial assessment and treatment with the ABCDE approach and learn more about the current evidence and principles of the ABCDE approach to be perfectly prepared for emergency medicine.

Overview of the ABCDE Approach

The ABCDE approach can be used in the street at the accident site, or in the emergency department. The ABCDE approach is used to:
- Provide life-saving treatment
- Assess the patient and prepare a treatment algorithm
- Break down complex clinical situations into manageable smaller and simpler parts
- Establish situational awareness among health-care providers
- Buy time until we establish a final diagnosis and formulate a definitive treatment plan

Current Evidence in Favor of the ABCDE Approach

The ABCDE approach is supported by expert consensus and is widely accepted by emergency doctors, critical care specialists, and traumatologists. A systematic approach such as the ABCDE approach is proven to be **time-saving and more importantly life-saving**. It can help the treating physician in prioritizing the different problems a **polytrauma patient** might have, and treat the immediate life-threatening problems first. Therefore, uniform adoption of the ABCDE approach has been recommended and implemented in most hospitals in the United States.

Who needs ABCDE?

All patients presenting with **polytrauma, acute injury, or those who are critically ill** should undergo an ABCDE assessment and treatment algorithm. Fortunately, the clinical signs of critical illness are the same regardless of the cause or etiology. Therefore, exact knowledge of the underlying cause is not necessary for initial treatment.

The ABCDE approach is proven to be valuable in detecting the early signs of impending **cardiac arrest** and can prepare the emergency doctor to deal with cardiac arrest promptly and quickly. In fact, cardiac arrest might be prevented if we follow the ABCDE approach. For instance, if adequate breathing is checked and secured in a polytrauma patient with tension pneumothorax, we can prevent cardiac arrest in that patient.

The ABCDE approach should be also used in post-resuscitation care after the successful resuscitation of the patient and the return of spontaneous circulation.

If the patient is unresponsive, has absent or abnormal breathing, and is pulseless, cardiac arrest is suspected. ABCDE approach is not at all recommended for patients who have a cardiac arrest. In that case, the ABCDE approach should NOT be followed. Patients in cardiac arrest should receive cardiopulmonary resuscitation and one should call for help.

Principles of the ABCDE Approach

In most cases, an assessment algorithm in medicine is performed in a sequential manner. The ABCDE approach is an exception here. Some experts recommend that one should follow the ABCDE approach simultaneously and continuously in the management of the polytrauma or critically ill patient prior to the establishment of a definite diagnosis.

In most cases, the ABCDE approach might be more valuable in saving the life of the patient than reaching a definitive diagnosis and providing etiology-specific treatment. Therefore, understanding the principles of the ABCDE approach is valuable to the treating physician as it can buy time for him or her until a definitive diagnosis is reached.

The ABCDE approach stands for **Airway, Breathing, Circulation, Disability, and Exposure**. Airway problems, which are often life-threatening, should be assessed and
treated before going further in the ABCDE approach. Breathing problems should be assessed and treated next and so on. This might at first seem like a sequential approach, however, it is important to emphasize a point here.

If at some point during this approach we see a problem in circulation while we are at the disability assessment, we should go back to the assessment of the airway and breathing before we attribute the circulatory failure to pure circulation problems. This is what we mean by “the ABCDE approach should be followed simultaneously and continuously”.

Once we finish one cycle of the ABCDE approach, our assessment should be repeated until the patient is stable. If the patient deteriorates after becoming stabilized, the ABCDE approach should be followed again from the beginning.

What is the ABCDE Approach?

As we have already established, the ABCDE approach is a systematic approach to the assessment and treatment of the airway, breathing, circulation, disability, and exposure of the injured or critically ill patient.

Airway assessment and treatment

The airway can be checked by inspection of the patient's head and neck, checking the patient's voice, and during the auscultation of the chest while assessing the breathing of the patient. To maintain the patency of the airway of the patient, the head should be tilted, and the chin should be lifted up. Suctioning of the airway is useful in removing any secretions, blood or vomit material or any foreign body that might be obstructing the airway. For conscious patients, five back blows alternated with five thrusts on the abdomen assist in removal of the obstruction. If the patient is unconscious, cardiopulmonary resuscitation is recommended with help of teammates.

High Flow Oxygen therapy and/or intubation might be needed to secure the airway of the patient. Intubation might be oropharyngeal or nasopharyngeal. A patient with suspected basal skull fracture should not undergo nasopharyngeal intubation.

Breathing assessment and treatment

The respiratory rate should be checked and is normally between 12 to 20 breaths per minute. Chest wall movements should be assessed. Symmetric chest wall movements and expansions are expected. Chest percussion is useful in excluding hemothorax “dullness note to percussion” or pneumothorax “hyper-resonance note to percussion”. Identification of cyanosis, any distension in neck veins and lateralization of the trachea should be assessed. Lung auscultation is useful in the assessment of breathing in injured patients. Pulse oximetry should give a reading between 97 to 100% to be considered as normal.

Treatment of breathing problems include:

- Seating the patient comfortably
- Rescue breaths if needed
- Inhaled medications to alleviate bronchoconstriction if needed
- Bag-mask ventilation to improve peripheral oxygenation
- Decompression of a tension pneumothorax if suspected or confirmed
Circulation assessment and treatment

Skin color should be checked as it is a good indicator of adequate circulation. Sweating is a sign of compromised circulation. Changes in skin color, sweating and low level of consciousness indicate decreased perfusion. Capillary refill time should be less than 2 seconds. Normal pulse rate in an adult is between 60 to 100 per minute. The patient might be in tachycardia if there is pain, bleeding, or dehydration. Blood pressure should be checked at this stage to exclude hypotension. Electrocardiography monitoring is also indicated in the assessment of the circulation.

Remember, if the patient develops cardiac arrest, the ABCDE approach should be discontinued and cardiopulmonary resuscitation approach should be initiated instead.

Treatment of an impaired circulation includes stopping ongoing bleeding, elevation of the legs to improve cerebral blood perfusion, intravenous access and administration of isotonic saline.

Disability assessment and treatment

Disability can be assessed using the AVPU approach:

- Alert
- Voice-responsive
- Pain-responsive
- Unresponsive

If one is experienced with the Glasgow Coma Scale, it should be used and documented in case of traumatic brain injury. Limb movements, pupillary light reflexes, and blood glucose levels should be assessed as part of the disability assessment.

<table>
<thead>
<tr>
<th>Patient Case</th>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td>Impaired level of consciousness</td>
<td>Airway, breathing, and circulation problems should be re-assessed and treated properly</td>
</tr>
<tr>
<td>Patent airway, good breathing, and normal circulation</td>
<td>Look for other causes of an impaired level of consciousness such as poisoning or traumatic brain injury</td>
</tr>
<tr>
<td>Hypoglycemic</td>
<td>Glucose in the form of dextrose should be administered</td>
</tr>
<tr>
<td>Capable of oral intake</td>
<td>Simple carbohydrates might be administered in an oral form</td>
</tr>
</tbody>
</table>

Exposure assessment and treatment

Finally, the treating physician should expose the skin of the patient properly such as trauma signs, blood loss, skin rashes, marks of needles, etc. to exclude any other hidden injuries and measure and maintain a good temperature of the patient. Hypothermia should be avoided whenever possible. Once the patient is stable, we should look for a definitive diagnosis and specific treatment should be started.

ABCDE approach is a definite and structured tool to manage patients in acute and surgical emergencies both in prehospital first aid and in-hospital management. It assists in the assessment of the seriousness of the condition and securing the life of the patients.
References


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