Coma

A *coma* is a profound or deep state of unconsciousness. The affected individual is alive but is not able to react or respond to life around him/her.

CAUSES

A coma may occur as:

- An expected progression or complication of an underlying illness.
- The result of damage caused by an accident (*head trauma*).

A *persistent vegetative state*, which sometimes follows a coma, refers to a condition in which individuals have lost *cognitive* (knowing) neurological function and awareness of their environment, but retain non-cognitive function and a preserved sleep-wake cycle. It is sometimes described as when a person is technically alive, but his/her brain is dead. However, that description is not completely accurate. In a persistent vegetative state the individual loses the higher cerebral powers of the brain, but the functions of the brainstem, such as breathing (*respiration*) and circulation, remain relatively intact. Spontaneous movements may occur and the eyes may open in response to external events (*stimuli*), but the patient does not speak or obey commands. Patients in a vegetative state may appear somewhat normal. They may occasionally grimace, cry, or laugh.

TREATMENT

Once the patient is out of immediate danger the medical team will concentrate on preventing infections and maintaining the patient's physical state as much as possible. Such maintenance includes preventing pneumonia and bedsores, and providing balanced nutrition. Physical therapy may also be used to prevent permanent muscular contractions (*contractures*) and boney (*orthopedic*) deformities that would limit recovery for the patients who emerge from coma.

PROGNOSIS

The outcome for coma and vegetative state depends on the cause and on the location, severity, and extent of neurological damage; outcomes range from recovery to death. People may emerge from a coma with a combination of physical, intellectual, and psychological difficulties that need special attention. Recovery usually occurs gradually, with patients acquiring more and more ability to respond. Some patients never progress beyond very basic responses, but many recover full awareness. Patients recovering from a coma require close medical supervision. A coma rarely lasts more than 2 to 4 weeks. Some patients may regain a degree of awareness after vegetative state. Others may remain in a vegetative state for years or even decades. The most common cause of death for a person in a vegetative state is infection such as pneumonia.

Research is continually being done to learn more about this problem.

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