Coma

1. When is a patient out of a Coma?

A scale called the Glasgow Coma Scale is used to measure the level of consciousness, with the maximum score being 15, when a patient is fully alert and usually out of post traumatic amnesia (PTA). A person is considered to be out of coma when s/he gains a score of 8-9 but at this stage s/he will still be very confused and may not be very responsive.

Post-Traumatic Amnesia (PTA)

1. What is Post-Traumatic Amnesia?

PTA refers to the period during which a person who has suffered a traumatic brain injury is confused, disoriented and unable to lay down new memories. This is the stage that usually follows coma. Even people who have suffered only a mild brain injury and do not lose consciousness will experience a short period of PTA.
People still retain memories from before the injury and relatives often find it difficult to understand that while pre-injury memories are intact the patient now cannot remember anything from day to day. In the early stages of PTA, the person cannot retain information even for a few minutes. Thus, a patient will not remember that his/her family and friends have been to visit and the next time they come may accuse them of never coming to visit.
Almost no-one with a serious head injury can remember their accident, particularly if they lost consciousness immediately. This is thought to be because the brain has not had time to process a memory. As a person has no memory of the incident it is often difficult for him/her to accept the explanation that s/he has been involved in an accident.
Behaviour during PTA can vary quite considerably from patient to patient. Thus one patient might be very quiet and inert, paying little or no attention to his/her surroundings while another might be extremely agitated, noisy and physically and/or verbally aggressive. During this period the patients can be very disinhibited (e.g. they may say or do things which cause their family to be embarrassed). It is important to remember that this is a temporary phase and behaviour will improve as the patient emerges from PTA although the inappropriate behaviours may not disappear entirely.

2. How Does One Interact With People In PTA?

It is important not to give the person too much information at once or they will be overwhelmed and perhaps become agitated or withdrawn because they cannot cope. The patient will not be able to cope with too many visitors at once. Trying to carry on a conversation while there is a TV or radio on in the background might cause difficulties. People should not speak too quickly as the person's ability to process information is much slower than it would be normally (one also has to be careful not to speak so slowly that s/he feels he is being treated as though s/he's mentally deficient!). Do not present the patient with alternatives to choose from; it is better to ask one question at a time which requires only a 'yes' or a 'no'.
It is also important not to keep asking the patient whether they remember events. Relatives often keep asking the patient "*Do you remember when we did .....?*" It is better to say something along the lines of "*We really enjoyed ourselves that time we .....*" and talk to the patient of things they've done in the past. It can sometimes be difficult to hold a conversation with someone in PTA and often it's a good idea to talk to them about what you've done or about sport or some other topic that is of interest to them.
Relatives sometimes ask whether it is possible to do something which will help the person come out of PTA more quickly. As the brain recovers the patient will emerge from PTA but it isn't actually possible to hurry this process. However, it is helpful to remind the patient of where they are and orient them to time as long as this is not taken to extremes. It can also help to bring in photos and talk about the people and events associated with the photos, and to talk about past events.

3. How Does One Manage Behaviour Problems Associated With PTA?

The important thing to keep in mind is that people have very little control over their behaviour while they are in PTA (particularly in the early stages) and it is necessary to modify our behaviour and the environment to manage the patient. It is also important not to take any abuse personally; try to keep in mind that the patient is simply reacting to the environment and he is being abusive towards you simply because you are there.
The patient in PTA needs a relatively quiet environment as too much stimulation is overwhelming at this stage. They may need to be physically restrained for their own protection to prevent them falling out of bed or may need to be restrained in a chair if likely to try to walk on their own with orthopaedic fractures. The patient's hands

might need to be restrained if they are trying to pull out tubes or their trachie.
When a patient is verbally aggressive or swearing it is usually best to ignore it and if possible to walk away and return when they have quietened down. It is important to remember that they cannot really control their behaviour at this time. It is also important that only one person talks to the patient at a time as it might only increase the agitation if everyone is talking at the person in an attempt to quieten them down. There is no point in trying to reason or argue with the patient.

4. What is a Suitable Environment for People in PTA?

It is best for people in PTA to be in a specialised Brain Injury Rehabilitation Unit (if possible) where staff are used to dealing with such patients and understand the behaviours.
In the early stages of PTA particularly, the environment should be relatively quiet as too much noise can be distressing to these patients. It might also be necessary to limit visitors to two at a time. Patients also require adequate rest periods during the day as they become easily fatigued.

5. What Assessments Take Place While the Patient is in PTA?

A PTA scale is administered daily to determine when the patient is out of PTA. The physiotherapist also assesses the patient to determine whether there are any motor impairments or muscle length changes. The speech pathologist will also be involved if the patient has swallowing problems or is unable to communicate. The occupational therapist will often carry out a showering and dressing assessment (where appropriate) to determine whether the patient is independent in any of the tasks.
More complex assessments such as the neuropsychological assessment of the patient's cognitive abilities, a speech and language assessment and an occupational therapy assessment of more complex functions of daily living are postponed until the patient is out of PTA. The patient's cognitive abilities (i.e. thinking skills) are so impaired during PTA that one would get a false impression of the extent of their impairment if assessments were carried out at this point in their recovery. Furthermore, it would be very difficult to assess the patient when they are unable to concentrate or pay attention to the tasks and would probably be quite stressful for them.

6. What Type of Therapy Should People receive when they are in PTA?

Therapy which is carried out while the patient is in PTA should be of the type which does not place too many demands and does not require the patient to memorise information. Some types of physiotherapy can be carried out at this time (e.g. tilt tabling and serial casting to prevent muscle shortening), as this type of therapy does not require the patient to actually do anything. When the patient is less agitated and able to pay attention for short periods the physiotherapist is sometimes able to get the patient to participate in simple retraining exercises. This is because the patient is learning the task by actually doing it. Similarly, the occupational therapist may be able to do showering and dressing retraining. More complex therapy, however, needs to be delayed until the patient emerges from PTA.

7. What Determines When a Person is Out of PTA?

A daily assessment is carried out using a PTA scale which consists of questions relating to orientation for person, place and time. The scale also involves a simple memory test that requires the patient to learn the name of the therapist who administers the test and to learn three pictures of common objects. When the person can answer all the questions correctly on three consecutive days they are considered to have emerged from PTA on the first of these three days. Recent research has indicated that when the patient has been in PTA for four or more weeks they are considered to have emerged from PTA when they achieve the first score of 12, however, the criteria of three consecutive 12/12 scores still stands for patients with a PTA less than 4 weeks.

If the patient is unable to speak it is still sometimes possible to carry out a PTA assessment. As long as the patient has a reliable Yes/No response the questions can be asked as multiple choice questions and the patient simply indicates 'Yes' or 'No' to each alternative. When a patient has an expressive dysphasia but has relatively intact receptive skills the PTA assessment can be carried out by presenting written answers on cards and asking the patient to point to the correct answer.

In a very small number of cases a person remains permanently confused and may not know, for example, what year or month it is. This is because the injury to the brain is extensive and the person has problems learning new information.

It is important to assess PTA for three reasons:

1. The way a patient is managed is determined by whether or not they are in PTA.
2. It is necessary to know when the patient is out of PTA so that more complex assessments and therapy can be carried out.
3. The duration of PTA is considered to be the best indicator of the severity of the injury and of outcome.

Severity of injury is determined as follows:

PTA less than one hour	= a mild injury
PTA of 1 - 24 hours	= a moderate injury
PTA of 1 - 7 days	= a severe injury
PTA 1 - 4 weeks	= a very severe injury
PTA more than 4 weeks	= an extremely severe injury

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