Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)

Administration and Scoring

Hello, my name is Arthur Shores. Welcome to this presentation on the administration of the Abbreviated-Westmead Post-Traumatic Amnesia Scale, or the A-WPTAS, as we shall refer to it.

The scale was developed to be helpful in the early identification of cognitive impairment following mild traumatic brain injury (mTBI).

Mild traumatic brain injury is an acute brain injury resulting from mechanical energy to the head from external forces. Reports suggest that in adults 70-90% of all hospital-treated traumatic brain-injuries are classified as mild.

Prompt identification of patients with cognitive problems is very important in the management of the acute stages of mTBI. The most common symptom of cognitive impairment is memory loss or amnesia. For patients presenting with a history of head injury, what we need to know is, do they have cognitive impairment? If so, this informs us as to the presence of possible brain damage.

The A-WPTAS was developed as a method of measuring the duration of post-traumatic amnesia (PTA) because this is a useful way of identifying the extent of brain damage. The abbreviated scale is based on the original Westmead PTA scale; however patients are tested in hourly intervals instead of daily intervals.

The scale is essentially an extended version of the Glasgow Coma Scale (GCS) and was developed so that a wide variety of health professionals can more accurately assess the duration of PTA in patients suspected of having suffered a mild TBI. Andrea Lammel and I are responsible for the concept underlying the A-WPTAS, based on earlier work by Jennie Ponsford. Zoe Fitzgerald had a major contribution in the development of this presentation. I hope you find it of value in understanding how, when and why the A-WPTAS should be administered. Please remember that this is only a guide to the early diagnosis of a mild TBI. At the end of the day, it will be a combination of the developing research evidence, clinical acumen and most importantly, common sense, which must prevail when the diagnosis of mTBI is considered.

I would like to take this opportunity to extend my thanks to the NSW Motor Accident Authority for their support of this project.

This presentation was compiled by
A/Professor Arthur Shores & Zoë Fitzgerald
Macquarie University 2008
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)

Administration and Scoring

- Method of measuring length of PTA during the acute management of mild traumatic brain injury i.e. PTA < 24hrs
- A-WPTAS based on original Westmead PTA scale
- Patients are tested at hourly intervals instead of daily intervals
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)

<table>
<thead>
<tr>
<th>Arrival in ED for Suspected Brain Injury</th>
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<tbody>
<tr>
<td>GCS &lt;13</td>
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<tr>
<td>Westmead PTA Scale Daily</td>
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<tr>
<td>Moderate – Severe Head Injury</td>
</tr>
<tr>
<td>GCS ≥13</td>
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<tr>
<td>Abbreviated WPTA Scale Hourly</td>
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<tr>
<td>Mild Head Injury</td>
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Use of A-WPTAS and GCS for patients with MTBI

The A-WPTAS was developed as an objective measure of head trauma by Westmead and Glasgow Coma Scale (GCS). GCS is helpful in the assessment of trauma to the head and provides an objective measure of the neurological status of patients. For patients who have experienced GCS of 3 to 5, a brief screening test, the GCS, should be used in conjunction with clinical judgment. Patients scoring 13 to 15 can be discharged. For patients who do not obtain GCS 13 to 15, more thorough assessment may be necessary.

Admission and Discharge Criteria: A patient is considered to be out of PTA when they score 15.

Both the GCS and A-WPTAS should be used in conjunction with clinical judgment.

Data: 24th June 2009

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<th>Time</th>
<th>T1</th>
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- Orientation: 3/3 (ask if known)
- Name: 3/3
- Place: 3/3
- Why are you here: 3/3
- Month: 3/3
- Year: 3/3
- Inappropriate words: 3/3
- Incomprehensible sounds: 2/2
- None: 1/1

GCS Score out of 15: 15

- Picture 1: Show picture
- Picture 2: (face crow)
- Picture 3: (face crow)

A-WPTAS Score out of 18: 18/18/18/18
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)
Administration and Scoring

Orientation Questions

Question 1: WHAT IS YOUR NAME? The patient must provide their full name.

Question 2: WHAT IS THE NAME OF THIS PLACE? The patient has to be able to give the name of the hospital. For example, Westmead Hospital. (NB: The patient does not get any points for just saying 'hospital'.) If the patient cannot name the hospital, give them a choice of 3 options. To do this, pick 2 other similar sized hospitals in your local area or neighbouring region. In Westmead Hospital’s case the 3 choices are ‘Nepean Hospital, Westmead Hospital or Liverpool Hospital’.

Question 3: WHY ARE YOU HERE? The patient must know why they were brought into hospital. E.g., they were injured in an accident, fell, assaulted or injured playing sport. If the patient does not know, give them three options, including the correct reason.

Question 4: WHAT MONTH ARE WE IN? For emphasis, the examiner can ask what month are we in now? The patient must name the month. For example, if the patient answers ‘the 6th month’, the examiner must ask the further question ‘What is the 6th month called?’.

Question 5: WHAT YEAR ARE WE IN? It is considered correct for patients to answer in the short form ‘08’, instead of ‘2008’. Also, an acceptable alternative prompt (for the rest of the 2000’s) is ‘The year is 2000 and what?’

Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)
Administration and Scoring

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Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS) Administration and Scoring

“March” Correct answer = June

“2007” Correct answer = 2008

Check patients understanding

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<table>
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PTA refers to a period of disorientation or confusion and a disturbed ability to retain new continuous information (anterograde memory) that occurs in individuals after neurotrauma.

- GCS
- A-WPTAS – pictures
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)

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GCS Score out of 15: 14

<table>
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<tr>
<th>A-WPTAS</th>
<th>Score out of 15:</th>
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<tbody>
<tr>
<td>T1</td>
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</tr>
<tr>
<td>T2</td>
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<td>T3</td>
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<td>T4</td>
<td>15</td>
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<tr>
<td>T5</td>
<td>15</td>
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</tbody>
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Picture Cards: the first time - T1
Present the set of 3 cards for approximately 5 seconds.
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)
Administration and Scoring

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>T1</th>
<th>T2</th>
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<th>T4</th>
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</tr>
</thead>
<tbody>
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<td>6</td>
<td>6</td>
<td>6</td>
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<td></td>
</tr>
</tbody>
</table>

**Motor**
- Always moves
- Localized
- Abnormal motion
- Extension
- None

**Eye Opening**
- Spontaneously
- To speech
- To pain
- None

**Vertal**
- Orientation **confused**
- Name
- Place
- Why are you here
- Month
- Year

**GCS**
- Spontaneous
- Inappropriate words
- Incomprehensible words
- None

**Picture Cards: the first time - T1**
Present the set of 3 cards for approximately 5 seconds

**A-WPTAS**
Score out of 15

Ensure that the patient can repeat the names of each card.
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)
Administration and Scoring

2. Picture Recognition

Straight after administering the GCS (standardised questions), administer the A-WPTAS by presenting the 3 Westmead PTA cards.

- Picture Cards the first time - T1:
  Show patients the target set of picture cards for about 5 seconds and ensure that they can repeat the names of each card. Tell the patient to remember the pictures for the next testing in about one hour.

- Picture Cards at each subsequent time T2-T5:
  Ask patient, “What were the three pictures that I showed you earlier?”
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS) Administration and Scoring

Scoring:

For patients who free recall all 3 pictures correctly, assign a score of 1 per picture and add up the patient’s GCS (out of 15) and A-WPTAS memory component to give the A-WPTAS score (total = 18). Present the 3 target pictures again and re-test in 1 hour.

For patients who can not free recall, or only partially free recall, the 3 correct pictures, present the 9-object recognition chart. If patient can recognise any correctly, score 1 per correct item and record their GCS and A-WPTAS score (total = 18). Present the target set of pictures again and re-test in 1 hour.

For patients who neither remember any pictures by free call nor recognition, show the patient the target set of 3 picture cards again for re-test in 1 hour.
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS) Administration and Scoring

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Example

<table>
<thead>
<tr>
<th>GCS</th>
<th>Score out of 15</th>
<th>15/15</th>
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<td></td>
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<td>15</td>
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<tr>
<td>Picture 1</td>
<td>Show pictures (see over)</td>
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<td>A-WPTAS</td>
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<td>18/18</td>
<td>18/18</td>
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</tbody>
</table>

Minimum observation for mild TBI = 4 hours post time of injury
Summary

- A-WPTAS is a method of measuring length of PTA during the acute management of mild TBI.
- Patients are tested hourly until perfect score of 18 is achieved, classifying them out of PTA.
- GCS ≥ 13
- Motor = 6
- Eye Opening = 4
- Verbal orientation questions:
  - 5 = all correct
  - 4 = <5 correct, therefore ‘confused’
  - 3 = <3 inappropriate words
  - 2 = incomprehensible sounds
  - 1 = fails to respond
- Important that correct answers are provided for next testing session.
- Present Picture cards – check patient has registered
- On following assessment (T 2+), assess patients ability to recall pictures
- Only present the recognition chart if patient is unable to free recall any of the 3 pictures.
- If patient can recognise pictures, are still given full credit on scale.
- If patient fails to identify one or more of the pictures, show the pictures again and re-test in an hour.

Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)
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<td>6</td>
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</tbody>
</table>

Motor
- Closure: 5
- Abnormal Reflex: 4
- Pupil Size: 3
- Extension: 2
- Arms: 5

Eye Opening
- Photostim: 5
- No response: 3

Verbal
- Oriented: 5
- Name: 5
- Why are you here: 5
- Month: 5
- Year: 5
- Confused: 3
- Inappropriate words: 3
- Incomprehensible sounds: 3

GCS Score out of 15
- 3 5 5 5 5

Picture cards:
- Picture 1: place
- Picture 2: plane
does not open
- Picture 3: plane
- Score out of 15: 0 1 1

A-WPTAS
- Score out of 15: 0 0 1 1 1

Back
Glasgow Coma Scale (GCS) & Abbreviated Westmead PTA Scale (A-WPTAS)

This presentation was compiled by A/Professor Arthur Shores & Zoë Fitzgerald, Macquarie University

Information is based on the Guidelines of Mild Traumatic Brain Injury (MTBI) following closed head injury, created by the NSW Motor Accidents Authority (MAA) and the Brain Injury Rehabilitation Directorate (BRID), Greater Metropolitan Clinical Taskforce, NSW Health.

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Music was provided by Matt Amery

References & Links