CNS Treatments

Management of Coma in the First Hour

- Improve oxygenation (face mask with 10 l/min oxygen flow aiming at a pulse oximeter saturation of >95%).
- Intubate if patient cannot protect the airway (ie, pooling secretions, gurgling sounds) or with increased work of breathing.
- Intubate any comatose patient with irregular ineffective respiratory drive and poor oxygenation.
- Intubate any comatose patient with major facial injury or consider emergency tracheostomy.

Management of Coma in the First Hour

- No harm is done if a patient with a high likelihood of hypoglycaemia is immediately given 50 ml of 50% glucose, even before the blood sugar is known (with co-administration of 100 mg thiamine intravenously).
- No harm is done administering naloxone if opioid intoxication is suspected.
- Flumazenil reverses any benzodiazepine toxicity.

Treatment for ABM

- Ceftriaxone IV 2g every 12h or cefotaxime 8-12 g divided every 6h +/- vancomycin IV 2g divided every 12h.
- Ampicillin IV 12g divided every 4h +/- gentamicin if suspected Listeria monocytogens.
- dexamethasone 10mg x4 for 4 days

Treatment for viral encephalitis

- IV acyclovir (10mg/kg) x3
- Antipyretics (Acetaminophen / ibuprofen)

Treatment for Wernicke encephalopathy

- high dose IV thiamin
- Glucose

GBS treatment- Immunotherapy

- IVIg (0.4 g/kg daily for 5 days) or
- Plasma exchange (4-5 sessions)

over 1-2 weeks

- careful monitoring of vital capacity

Supportive Management for possible complications

- Careful monitoring of vital capacity (VC) with intubation for those with a VC of <15 ml/kg or which is rapidly dropping
- Twenty five per cent of GBS patients require ventilatory support during their illness, which may be predicted if there is rapid progression of limb weakness, facial or bulbar weakness or dysautonomia .
- Cardiac monitoring for possible arrhythmias throughout the acute stages .
- Venous thromboembolism prophylaxis with compression stockings and low molecular weight heparin is recommended for non-ambulant patients

MG Treatment

- Myasthenic crisis Rx (IVIg or PE)
- Long-term Rx
  - Oral steroids/immunosuppressives
  - Acetylcholinesterase inhibitors
  - Thymectomy
  - Rituximab and new monoclonals

MS

Relapse treatment

Faster recovery but no evidence of decreasing residual disability

- High-dose steroids
  - IV/oral Methylprednisolone 1 g daily for 3-5 days
  - 30-50 % do not respond adequately
- ACTH gel (IM or SC) 80 u daily for 5-15 days– more potent immunomodulatory effect but expensive and not available.
- Plasma exchange for refractory relapses
- IV Immunoglobulins ? not very effective

Management of SAH

Treatment is aimed at preventing the rebleeding and vasoconstriction that often follow SAH.

Aneurysms can be clipped surgically or " coiled" by interventional techniques. 1

The calcium-channel blocker nimodipine is used to minimize vasoconstriction and delayed brain ischemia. 2

Management of Intraparenchymal hemorrhage

- correcting any coagulopathies
- surgical decompression in cerebral hemorrhage
- control risk factors (Htn) to prevent recurrence

if there arteriovenous malformation:

- embolization
- surgical resection

Stroke management:

Acute:

- 300 mg aspirin
- Glucose, hydration, O_2 SAT, temp should be maintained within normal limit
- Don't lower BP
- Alteplase (thrombolytic) if within window and no contraindication
- Thrombectomy if occlusion confirmed by CTA/MRA

Secondary:

- DAPT (aspirin + clopidogrel if high risk)
- Statins if high lipid profile

First line treatment for essential tremor:

- Propranolol (B-blocker)
- Primidone (Barbiturate)
- Deep brain stimulation for thalamus

Management of PD:

- Levodopa + Carbidopa + entacapone (COMT inhibitor)
- Amantadine (NMDA antagonist)
- Selegeline (MAO-B inhibitor)
- Anticholinergics: trihexyphenidyl, benztropine.

Management of alzheimer's:

- Donepizil: cholinesterase inhibitor; increases acetylcholine levels in the brain.
- Memantine: NMDA receptor antagonist; regulates glutamate activity, also HT3 receptor antagonist

- For agitation/aggression: antipsychotics (risperidone, olanzapine)

Management for primary headaches

	Tension	Migraine	Cluster
Abortive	• NSAIDs • Paracetamol / Aspirin	• Oral triptans + NSAIDs • nasal triptans in 12-17 year olds • if above not effective : metoclopramide, prochlorperazin	• 100% oxygen • subcutaneous triptan
Prophylaxis	• tricyclic amitryptiline • venlafaxine • mirtazapine • tizanidine	• Propranolol • topiromate • amytriptyline • for menstrual migraine - frovatriptan (2.5mg) - zolmitriptan (2.5mg) • erenumab	• Verapimil • tapering dose of prednisolone

Treatment for Giant cell arteritis:

Empirical steroids

Management for Intracranial Htn:

LP pressure > 200 mm CSF

- Acetazolamide (carbonic anhydrase inhibitor)
- Monitoring visual fields and weight management

Management of Intracranial hypotension:

- Gadolinium enhanced MRI to confirm
- LP pressure < 60 mm CSF
- resolves on its own but if symptoms persist, a blood patch is used to cover the dural leak

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Treatment for optic neuralgia:

- Carbamazepin is first line treatment

Status Epilepticus: First-line Treatment Options

Benzodiazepine	Route	Dosing	Maximum Dose	Class & Level of Evidence
LORAZEPAM	IV	0.1mg/kg	4mg @ 2mg/min May repeat x1 in 5-10 min	Class I Level A
MIDAZOLAM	IM Nasal Buccal	0.2mg/kg	10mg	Class I Level A
DIAZEPAM	PR	0.2mg/kg	20mg	Class IIa, Level A

memorize loading dose

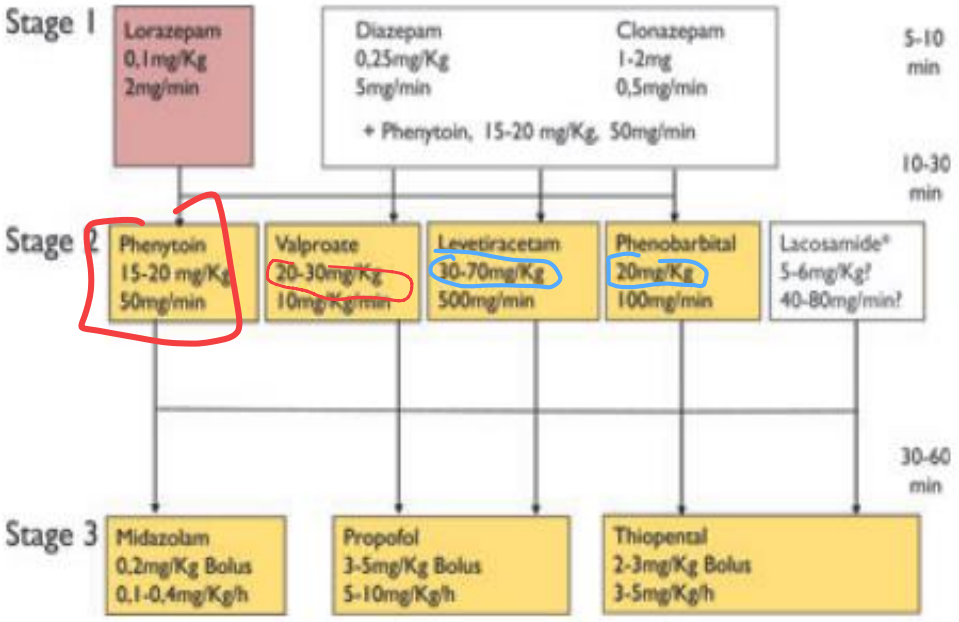

Figure 5.

Staged approach to the treatment of convulsive status epilepticus. *There is currently limited evidence for the use of lacosamide in SE (see Höfler et al., 2011) Modified after Trinka, 2007; Shorvon et al., 2008.

Epilepsia © ILAE

Treatment for absences seizure specifically:

- Sodium valproate: inhibits GABA transaminase → ↑GABA, also inactivates Na^+ channels
- Ethosuximide (not in Jordan): inhibits voltage gated Ca^{2+} channels
- Lamotrigine: inhibits Na^+ channels