Coma + Delirium

consciousness: state of awareness of self + surroundings

alterations
- coma: arousal affected
- delirium / dementia: content of consciousness altered
- sleep.

Coma: unarousable unresponsiveness

Anatomy: Reticular activating system "alerting system of brain"

located:
- upper brainstem tegmentum < upper pons, midbrain
- lower diencephalon: certain thalamic nuclei

↓ projects to whole cerebral cortex + receives recurrent innervation.
cortex modifies received info.

Disruption of this system = disruption of consciousness.

2 Broad Groups
- structural
- metabolic + other

- Structural: Mass lesion
  - tumor
  - abscess
  - hemorrhage
  - infarct
  - granuloma

  Lesion in RAS
  - brainstem stroke
  - thalamic hemorrhage.

  Widespread bilat damage to cortex + white matter
  ↳ trauma, meningitis, encephalitis, hypoxia, ischaemia

Mass lesion causes:
- distortion of deep structures
- ± herniation of medial temporal lobe through tentorium cerebelli

→ deep central structures laterally displ result in
- compression
- ischaemia
- hemmorhages

} in consciousness producing structures

cerebellar mass lesions similarly distorts post. fossa structures → leads to ↓ consciousness

Metabolic
- hypoxia: NB trauma pt "drunk"
- hypercapnia
- hypernatremia
- hypoglycaemia: NB
- hypothermia
- uremia
- hepatic F
- DKA

Drugs
- sedatives
- barbituates
- EtOH
- opiates
- salicylate
- anticholinergics
- amphetamines

Toxins
- methanol
- ethylene glycol
- CO
- mushrooms

Infx:
- bact. meningitis
- viral encephalitis
- sepsis
- typhoid
- malaria NB travel hx.

Epilepsy ictal | post ictal | drugs

Psych - catatonia

Other
- diffuse cerebral isch.
- fat embolism
- hypoT
- hyperT encephalopathy

Approach

stabilize

- C : check pulse + start compressions if none — 30:2 if alone
- A : open airway — head tilt chin lift / jaw thrust. — NB stabilize c-spine
- B : NB agonal gasps = x breathing (may be present in 1st min > cardiac arrest)
- Glucose

Disability : GCS
- best motor
  - 6 obeys
  - 5 localizes
  - 4 withdraws.
  - 3 abN flexion
  - 2 extension response
- verbal
  - 5 orient.
  - 4 confused
  - 3 inapp words
  - 2 incomprh sounds.
- eye opening
  - 4 spont
  - 3 speech
  - 2 pain

survey

? nasal stimulation c̄ cotton wool

Exposure / Environmental Control

Adjuncts to 1° survey
- ECG leads
- catheters (urine / NG)
- sats
- BP.

Now : special investigations based on findings / ddx.

NB Hx.

Delirium

Neuropsychiatric $ c̄ — acute onset — usually hours → days.
— fluctuating course — may have lucid intervals
— reduced ability to sustain attention

DSM 4

At least 2 of
- perceptual disturbance — (misinterpretations | illusions | hallucinat)
- incoherent speech
- disturbance of sleep wake cycle
- ↑/↓ psycomotor activity: may fluctuate

Pts range from hypoactive + blunted to raging uncontrollable maniac
Often worse @ night.

- Attention deficits: cardinal sx. Distractable
- Unable to maintain stream of thought.
- Disoriented to time most common.
- Loss of personal identity unusual.
- Recent memory impaired + worsened by attentional deficit
- Often persecutory delusions.
- Insight + judgement impaired: may confabulate
- May appear to be depressed: esp elderly pts.
- Writing may be impaired by motor + spatial impairment + c̄ spelling + syntax errors.

NB to recognise the delirium

Any sudden cognitive problem, particularly arising in hospital should presumed to be delirium

Special invest: bloods NB drug screen — blood / urine. NB thyroid. glucose.
U mcs. (esp. elderly!!!)
CT
CXR. (NB)
LP.

Mx:

ID + Rx cause
Environmental + supportive measures — orientate pt every time you see him (clock | calender). educate staff + family to do the same
— light (also @ night)
— ↓ noise
— warmth + nutrition adequate
— environment safe for pt + others.
↳ avoid restraint!!

Drugs (only when essential).

Antipsychotics: Haloperidol (low dose)
can give parenterally
can also use other APSHs

Benzo's: 1st line if seizures | EtoH inv.
useful adjunct to
Pt managable not obtunded.
Watch BP | resp.

Lorazepam 2mg q 4h.
(↓ elderly | hepatic D)

Watch out:
hypoxia
UTI | pneumonia in elderly

Guillian Barre

Acute inflammatory demyelinating polyneuropathy

cell mediated immunological reaction directed @ periph nerves — results in weakness + diminished reflexes

→ reduced supressor T-cell response
→ occasionally s-antibodies to myelin components found (x rarely measured) helpful if positive dx / historic variant

Term for a collection of clinical syndromes, although classic description is a demyelinating neuropathy c̄ ascending weakness

- segmental n. damage
- lymphocytes infiltr. n. roots + release cytotoxic substances that damages Schwann cells + myelin
- myelin removed by macrophages.
- if axon damaged, n. cell dies + can't regenerate

Clinical

3w after onset viral/bact illness — resp most freq, GI secondary — Ag in capsule shared c̄ nerves. org. c. jejuni (bact)

- pain suggestive of n. root irritation (50%)
- paraesthesia lower limb

CN may be affected: facial n. most common — may be 1st finding, often unilat + undistinguishable from Bells Palsy

Weakness develop over 3 → 21d, classically ascending symmetrical (Also 3-6 + 7-9 9-12.)

may be = generalized / prox

May worsen over hours — day, commence distally + ascend

Loss tendon reflexes (affected areas), plantar responses remain normal. (↓ tone can be c̄ signific weakness)

May be autonomic inv — fluctuating BP, tachycardia / bradycardia, urinary retention / constipation, facial flushing, anhidrosis / diaphoresis

~~sensory signs infrequent~~

most pts report paraesthesia, numbness or similar sensory changes

→ objective changes minimal + usually distal limbs, variable → no demarkated sensory level.

Investigations

CSF prot ↑ > 2nd/3rd wk of illness. (speculated due to widespread inflamm)

gamma globulin fraction ↑.

Usually (N) WBC cells cant (but pleocytosis in HIV assoc GBS)

EMG: prolonged conduction velocities (late)

Virology: occasionally rising titres to specific viruses

Campylobacter serology: (+) = poorer px

May do stool culture for c. jejuni

NB

↑ - short acting e.g. beta block
↓ BP
- IV fluids
- supine posture

A B C - arrythmias

Autonomic dysfunction
- heart rate - tachy / brady - symptomatic : atropine
- arrythmias
be prepared!

temp pacing for 2° / 3° heart block.

Any degree of resp F
→ intubate
- hypoxia
- rapidly declining resp funct
- poor / weak cough
- suspected aspiration
- forced vital capacity < 15 mL/kg

Possible resp failure NB later late sign.

NB IF deltoids + biceps weak : diaphr next.
next flexion weak / CN inv : danger sign.

See pt tds! Do peak flows!

1/3 = ICU
- labile dysautonomia.
- FVC < 20 ml/kg
- sev. bulbar palsy

Rx pain
- carbamazepine
- gabapentin

NB prevent thromboembolism
- physio
T
- sepsis
- pneumonia

Only plasma exchange + IV immunoglobulin (Polygam) have proven effective. → shortens recovery time
± 50% experience long-term residual neuropathy
most have ↓ QoL + physical functioning