An Interesting case of LOC

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Case

- Mrs. CM
- 64 yr old lady
- Admitted with an episode of LOC
- Similar episode 6/12 prior

Case- PMH

- IHD
- Renal impairment
- Diabetes
- Hypertension
- Mild dementia
- Poor mobility- mostly wheelchair bound

Rx chart

- Aspirin 75mg dly
- Insulin- mixtard
- Bumetamide 1mg dly
- Lactulose 15mls dly
- Baclofen 25mg bd

Examination on admission

- Pulse, BP, temperature and HGT normal
- Neurologically was intact and fully oriented
- Rest of the examination normal except for an old contracture in her L LL

Investigations admission

- Hb- 9.6
- Cr- 170 (stable)
- LFTs, biochemistry. TFTs normal
- CT brain on admission normal

In patient history

- 8 further episodes of LOC
- Progressively becoming more drowsy
- Blood tests repeated- similar to admission

- Repeat CT brain- as previous
- Holter and EEG normal

Further mgmt

- Seen by cardiologists
- Echo- moderate AS (conservative mgmt)
- Coronary angioplasty- stenosis LAD- stented

- Also seen by neurologists who suspected epilepsy despite normal EEG and started on valproate

Case cont..

- After starting valproate the LOC episodes stopped but the patient became more drowsy requiring NG feeding
- Referred to geriatricians after 2 weeks for further management and to take over

Examination + mgmt-2

- GCS 12/15
- Fixed pupils
- Otherwise rest was normal

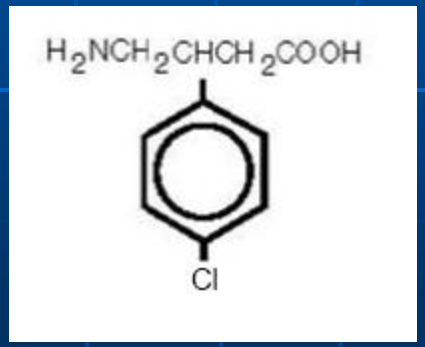
- Reviewing drug chart found that she was being prescribed baclofen 25mg bd on a regular basis through NGT

Mgmt cont..

- Baclofen dose was reduced with immediate improvement
- (NB Baclofen levels unavailable in Malta)
- 1 day later- GCS 15/15 and was able to feed independently- NGT removed
- Slowly tailed off and reached her previous level of independence on discharge. No further episodes of LOC nor drowsiness

Baclofen introduction

- is a derivative of gamma-aminobutyric acid (GABA)
- (*RS*)-4-amino-3-(4-chlorophenyl)butanoic acid



Mode of action

- produces its effect via modulating the GABA-B receptor
- Baclofen is capable of inhibiting both monosynaptic and polysynaptic reflexes at the spinal level, possibly by hyperpolarization of afferent terminals, although actions at supraspinal sites may also occur and contribute to its clinical effect

Pharmacokinetics

- Rapidly absorbed and eliminated
- Absorption is dose dependent- reduced with increasing levels
- Excretion mostly through the kidney- in healthy individuals 2- 7 hrs

Uses

- Primarily used to treat spasticity from spinal pathology, thus increasing mobility and quality of life. May also may improve pain in these patients
- Spinal cord injury
- Multiple sclerosis
- cerebral palsy
- Used to treat spasticity on CVA patients but.. see further on

Administration

- Oral
- Intratechal- more effective- used in patients with spinal problems as little baclofen reaches the spinal fluid

Dosage

- Should be started at a low dose of 10mg dly and titrated upwards up to 80mg in divided doses according to effect and side-effects.
- The lowest dose compatible with an optimal response is recommended. If benefits are not evident after a reasonable trial period, patients should be slowly withdrawn from the drug

Cautions-1

- Renal insufficiency
- Elderly
- Epilepsy- lowers threshold
- Chronic respiratory illness- slows down respiratory rate
- Pregnancy- increased risk of ventral hernias for foetus

Cautions-2

- CVA
- Parkinsons (worsens side-effects of dopa medications)
- Diabetics (increases glucose levels)
- Hypertonic bladder sphincter

Side-effects

- Large amount of side-effects with this medication
- Most common:
- Transient drowsiness in up to 63% of patients
- Dizziness and weakness (up to 15%)
- Fatigue (up to 4%)

Other side effects

- Neuropsychiatric- confusion, headache and insomnia most common
- Cardiovascular -hypotension
- Gastrointestinal- nausea and constipation
- Genitourinary -frequency

Overdosage

- May be subdivided into acute or chronic intoxication
- Acute presentation has more severe clinical manifestations, and higher incidence of seizures
- Diagnosed on clinical suspicion- also by taking baclofen levels if available

Acute OD

- Usually present with the following:
- Encephalopathy- disturbance of consciousness +/- seizures
- Respiratory depression
- Muscular hyoptonia
- Generalised hyporeflexia

Chronic OD

- May present with varied symptoms including hallucinosis, impaired memory, catatonia, or acute mania. Respiratory depression, apnoea, bradycardia, tachycardia, hypotension, hypertension, tremor, weakness, hypotonia, areflexia, urinary retension, sedation, coma seizures, orofacial dyskinesia, and hypothermia

Management

- Acute OD- withdrawal of drug and supportive measures. In severe cases hemodialysis is needed
- Chronic OD- withdrawal of drug and supportive measures are sufficient.
- No specific antidote

Literature

- Few cases reported in elderly and mainly involve patients having renal failure
- Baclofen doses varied between 5mg tds and 20mg tds
- Creatinine varied between 159-450

Withdrawal of drug

- Baclofen should be tapered off slowly due to a high risk of withdrawal syndrome that is similar to that of benzodiazepenes.
- Withdrawal symptoms may include hallucinations, delusions, agitation, delirium, disorientation, fluctuation of consciousness, insomnia, inattention, memory impairments, perceptual disturbances, anxiety...con/t..

Withdrawal of drug

- depersonalization, hypertonia, hyperthermia, formal thought disorder, psychosis, mania, mood disturbances, restlessness, and behavioral disturbances, tachycardia, seizures, tremors, autonomic dysfunction, hyperpyrexia, extreme muscle rigidity resembling neuroleptic malignant syndrome and rebound spasticity

Baclofen for CVA

- Studies have found that baclofen is unsafe in CVA patients
- High levels of drowsiness
- Intrathecal path- loss of residual walking ability
- Marginal effect of quality of life with many adverse effects.
- Botulinum most effective for spasticity.

Compared with other agents

- Other agents used for spasticity include
- Tinazidine
- Diazapam
- Dantrolene
- Botulinum

Comparing other agents

- Limited effectiveness for all 4 drugs when taken orally- though easiest to use
- Tizanidine may cause less muscle weakness but evidence is weak. More expensive.
- Most effective for spasticity in general- Botulinum and intrathecal baclofen- though invasive and expensive

Comparing other agents-Pain

- Botulinum toxin and intrathecal baclofen have been demonstrated to minimize pain; however, the impact of other medications needs further investigation.
- Larger studies are needed to establish effectiveness

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