Settings and successes in providing health care in otherwise difficult circumstances

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South Australia
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Background

- Intranasal Midazolam was first used in South Australia for seizure management in 2000

- Introduced in schools for children to replace rectal valium for prolonged seizures. Less invasive, easier to administer. Fast acting and effective.

- Allowed for administration by trained teachers and parents.

- Reduced length of seizure by quick administration while waiting for the ambulance to arrive.

- A test dose required prior to ongoing prescribing
Cont.

- The use of intranasal Midazolam was introduced in South Australia from the great work by an interagency working party involving The Department of Education and Children’s Services, SA, Flinders Medical Centre, Flinders University and the Children, Youth and Women’s Health Service. Margaret and Dr Michael Harbord who both consult at the Centre for Disability Health were among those leading the project.

- Midazolam was introduced for seizure management in adults with Intellectual disability in 2001. Test doses were done in the infirmary at the Strathmont Centre prior to ongoing prescribing.


- *The Epilepsy Report.*
Background continued

- The dose administered as the test/trial dose was also discovered to be effective sedation to allow for other intervention, such as venepuncture or a physical health check.

- People residing at Strathmont were then frequently prescribed Midazolam for minor procedures.

- The Nursing link with the clinic and Strathmont Health Centre / Infirmary allowed Midazolam use for people with Intellectual disability outside of the institution.
Disclaimer

• I suppose this is my story to tell as I have been involved from the beginning, initially in offering this service for adults and certainly now, children.

• What I offer today, along with the clinical aspect of expected safety/risk management/medical intervention; are my own observations and experience on how the medication works on the individual.

• The experience is unique to the individual and outcomes are always varied
Early Days

- Midazolam administration was only intranasal
- Quite challenging to administer, resistance to intervention and having stinging drops in their nose.
- Mucosal atomiser device, able to squirt the medication
- Oral midazolam, less invasive, same effect but may take longer to work
- Expectation that sleep (twilight sedation) was required for success
The Clinic

- Looks less like a doctors surgery or clinic
- Soft landings and relaxed attitude
- Room to move and sensory items available
- Standard emergency equipment available
- Oxygen, suction, airway, adrenaline, benzodiazepine reversing agent.
- Equipment for monitoring vital signs
Accessing the service at CDH

• A trial/test dose is only considered and offered through the clinic

• Generally the person is unable to consent for themselves so the consenting person is required to attend the initial appointment

• Informed consent, able to discuss benefits and risks associated with Midazolam use

• Establish if Midazolam is appropriate for trialling and possible ongoing use as pre-procedure sedation
What is offered

• Use of Midazolam after other anxiolytics have been unsuccessful as pre-procedure sedation

• If sedation is successful, bloods generally done

• Support and planning is offered in accessing a minor procedure with midazolam administration outside of the clinic

• Midazolam sedation is offered in both the child/adolescent and adult service
**What is Midazolam**

*Midazolam* is a short acting benzodiazepine

- Used as a sedative for minor medical procedures and may produce sleepiness or drowsiness.
- It is also prescribed to reduce anxiety, if necessary prior to medical appointments.
- Also prescribed for management with severe or prolonged seizures. (a trial dose is indicated prior to prescribing)….generally 5 -10mg is indicated for this.

**Contraindications side effects** weakness, amnesia, headache

- Decreased blood pressure
- Shallow or slower breathing
- Reaction to benzodiazepine medication- wheeze SOB, reduced swallowing (gag reflex) fainting

**Effect**

- Relaxes muscles, blocks memory

- A trial is always undertaken under medical supervision as the response is different for everyone
Rationale

• Never IV……..Packaging indicates otherwise. Label states IV or IM use.

• Venepuncture

• X-rays

• CT scans ……sedating effects are not enough for MRI

• Dental appointments/treatment

• ECGs

• Physical assessments or specific appointments

• Getting into a vehicle…. (offer home visit for trial)…GP and nurse

• Hair cut /podiatry (planning involved and plan for desensitization.)
Planning

Approach is equally important as the medication: some things considered

- Background information from someone who knows the person well
- Favourite drink
- Best approach to keep anxiety at a minimum
- Which method of administration will be tolerated best
- Do they need medication to actually attend the clinic for a test dose
- Discuss issues of fasting or withholding any medications prior to attending (Fasting may not be possible so often request that food is given earlier or kept light prior to attending the clinic)
- Level of comprehension or developmental age of the person
- Does the person know why they are coming to the clinic
How it’s done

• Attitude plays a big part: calm, unobtrusive, non-threatening approach

• Midazolam mixes with most things, diet coke, cordial, chocolate pudding, milk
• Sniffing what is offered can make or break the deal

• Those people that go on to drinking the mix tend to remain forever suspicious because it doesn’t taste quite right.

• They may tolerate direct administration into the mouth with a quick follow up of a small drink.
Administration

- Trial doses are generally done in increments of 5mg. With children, weight is considered.
- (under 16kg – 2.5mg)
- Frail people or people with Down Syndrome, consider 2.5mg, depending on my observations on the day. A GP is always present or available on the day of the trial dose.

- Don’t generally go past 20mg in a trial. A paradoxical effect may occur if the person is fighting the sedating effect and doesn’t understand why they feel like they do.

- If a person is unable to attend the clinic without an anxiolytic, this is taken into consideration
- Fasting may be required for bloods or if Midazolam is given as oral
- Midazolam is more rapidly absorbed after fasting and also a safety precaution should vomiting occur

- Only order 5mg/1ml
  Plastic ampoules (seizure management) are recommended but the contents of glass ampoules is still suitable for oral use.
The Hotdog
Time for effect

- This part is not scientific at all. Observing and maintaining a calm environment with no visible expectations allow the person to relax or at least feel safe.
- Generally we will wait 10 minutes between doses to observe any effects evident.
- If no or minimal sedation, another dose will be administered.
- 10mg to 15mg is often adequate sedation to have bloods done
- Vital signs, often being able to take a blood pressure or pulse is a good indication of intervention
- Visual observations, looking at body language, somnolence, dazed look or hypnotic state

- We aim to reduce the anxiety attached to needles or strange intervention that are not understood.

- The time the medication begins to work effectively is unique to the individual. Time ranges anything from 10 to 30 minutes.
- Discharge from the clinic is generally after 1 – 2 hours or when alert and responsive or ambulant.
- If allowed, we offer a wheelchair service to the car.
Effect

Other things that may inhibit absorption/effect of Midazolam given as oral/buccal or nasal.

- Blocked/runny nose
- Oral or gut health
- Spitting or tipping medication in the sink
- Uncertain dose from spillage while administering
- Polypharmacy or tolerance to benzodiazepines
- Effects of midazolam may be inhibited, prolonged or exacerbated by current medication being taken….............Grapefruit.
Anxiety or Promise

- Midazolam doesn’t always work when someone is in a state of acute anxiety or someone with a well developed sense of survival (Reptilian Brain or fright and flight mode). The effects are overridden when in this state.

- Adrenaline is often running high but when the danger is thought to be over, carer’s often report that the person slept all the way home. We are mindful of this event prior to discharging the person.

- A person may be enticed to attend the clinic with the promise of something special at the end of the appointment. That end goal tends to be the focus of the appointment with little or no concept of time in between.

- Midazolam may work best when they have reached their goal…such is a persons’ determination.
Statistics

- I have completed over 100 test doses of Midazolam for people with an Intellectual disability and a major aversion to having any health intervention

- Oxygen has been required twice.
- 5 people have been identified as unsuitable for ongoing prescribing for Midazolam to be used as pre-procedure sedation. The medication had little or no effect.

- Occasionally a person may appear over sedated but vital signs have remained stable and they are rousable but unwilling to join us.
- Occasionally, hiccups, low blood pressure

- Generally this has been diagnosed as ‘too comfortable’.

- I have been pushed off the couch so that people can continue to rest.

- The amnesic effects of Midazolam are evident in the person being happy to attend the clinic again. They tend to get a little suspicious when they see me!!
Case study

- 34 year old male. Autistic, highly anxious and ‘mostly’ non verbal
- TRIALED 15mg and was effective for taking bloods
- Then required a CT scan, required to drink contrast prior, also lots of family members arrived to support him. Given 15mg at the hospital prior to the event.
- Failed
- Plan B was a general anesthetic as the scan was much needed.
- Attempted Plan C
- Increased dose to 20mg as oral
- Arranged with radiology to omit the contrast and adjust their expectations of the process.
- He attended the clinic prior to the scan for administration of Midazolam, I stayed with him the whole time, also mum and case manager
- Kept the whole process very calm and told him that we were going together to have pictures taken of his sore belly, I would stay with him the whole time; constantly reinforcing this.
- He did everything I asked him to do, told him what was going to happen, I would hold his hands.
- In and out of the scanner.
- The technician came in to place groin protection and asked him to lift his arms up. He abruptly pulled away and told her something that sounded rather rude… thought I had lost him then.
- Oh no….Rabbit in the headlight look never far away but he trusted me enough to go through with something scary for him
- I requested that I hold his hands again, nearly finished………..
- He did this, as soon as it was over, sat up, off the bed and into the chair
- All done and we were both feeling just a little bit clever.
Summary

• Intranasal/buccal or oral Midazolam is generally effective in offering hypnotic sedation or in reducing anxiety prior to a procedure. The effects are variable for each person which is why a trial is essential.

• As we have demonstrated, sedation is only a part of it. Environment and attitude of those providing the service are equally as important in achieving a successful outcome for the person.

• Midazolam offers a snapshot in time to offer primary health intervention with dignity, safely and short term, with little or no memory of the event.