

PAEDIATRIC DE-ESCALATION AND RAPID TRANQUILISATION PATHWAY IN CORK UNIVERSITY HOSPITAL

Aim: to support acute management of children/young people with behavioural disturbance until definitive plans are agreed with Paediatrics, Psychiatry, or Anaesthetics.

FIRST LINE

Involve a trusted adult & Identify and anticipate triggers*

Environmental	Behavioural	Psychological	Respect Personal Space	Body Language	Ask What Helps	Other
Reduce stimulation (relocate to safe space, dim lights, favourite music/TV show). Reassess safety of staff & patient.	Verbal redirection, distraction, age appropriate direction, set reasonable limits, explain consequences	1:1 verbal support, open-ended questions, respond in even tone & manner, listen without rushing, address pain/hunger/etc.	Keep ≥ 2 arm length distance	Keep a calm demeanour, facial expression, and posture	Ask about specific techniques or tools that have helped in the past	Reward cooperation Active listening Build empathy



If possible, to take heart rate, blood pressure, ECG, and family history.

SECOND LINE: Oral medication†

Oral/buccal medications

Medications (except Clonidine) can be repeated once after 45-60 minutes

Option 1: Clonidine PO OR Promethazine PO

Option 2: Midazolam buccal/intranasal OR Lorazepam PO
Use benzodiazepines with caution

Option 1 + Option 2

Call Psychiatry if considering the use of anti-psychotics: Olanzapine PO (preferred) OR Risperidone PO (if patient is already on it)

45-60 minutes



Alert Paediatric Consultant $\pm$ Psychiatry $\pm$ Anaesthetics.

THIRD LINE: Intramuscular medication

Intramuscular (deltoid preferred):

Lorazepam IM

Promethazine IM

Olanzapine IM—**CAUTION: Risk of respiratory depression if given within 1 hour of a benzodiazepine.**



Post-sedation monitoring (refer to checklist)



Ongoing verbal de-escalation

Please consider:

- Neurodiversity—Option 1 is preferred due to risk of paradoxical reactions with benzodiazepines (BZD).
- Delirium—Anti-psychotics are preferred. Use opiates, BZDs, and anti-cholinergics with caution.
- Eating disorders—See Medical Emergencies in Eating Disorders (MEED) Guidelines
- Pregnancy—lorazepam and/or promethazine are preferred
- Severe respiratory problems—avoid BZDs
- Personal/Family history of cardiac disease (e.g. prolonged QTc, family history of sudden death)—avoid antipsychotics
- Substance intoxication/withdrawal.
- Is the patient anti-psychotic naïve?
- Does the patient have a history of paradoxical reactions?
- Does the patient have a relevant family history of adverse reactions? E.g neuroleptic malignant syndrome, etc.

Reversal agents:

Procyclidine—acute dystonia secondary to anti-psychotics (if procyclidine is unavailable, consider benztropine)
Flumazenil—respiratory depression secondary to BZDs

* Acute infection, pain, hunger, mealtimes, physical co-morbidities, substance intoxication/withdrawal/paradoxical reaction etc.
† Start low, go slow. Consider a top-up of usual medication in patients with pre-existing psychiatric illness or disability.

MEDICATION	DOSE	ONSET OF ACTION	PEAK EFFECT	MAX. DAILY DOSE	NOTES
Promethazine [Phenergan] (anti- histaminic)	PO: Age <12 years: 5-10 mg Age >12 years: 10-25 mg IM: Age <12 years: 6.25-12.5 mg Age >12 years: 10-25 mg	PO: 15-30 minutes IM: 20 minutes	PO: 2-3 hours IM: 2-3 hours	<12 years: 50 mg >12 years: 100 mg	Use with caution in children with epilepsy (significant anti-muscarinic activity). Requires ECG as soon as possible. May prolong QTc interval.
Clonidine (alpha-2-agonist)	PO: 1-4 micrograms/ kg Recommended starting dose is 2 micrograms/kg or 50 micrograms-100 micrograms (6 hourly)	30-60 minutes	PO: 3-5 hours	300 mcg	Monitor for hypotension and bradycardia, particularly when combined with a benzodiazepine or atypical antipsychotic. Can cause rebound reaction and agitation in 6-8 hours.
Midazolam (benzodiazepine)	Buccal: 5-9 years: 7.5 mg 10-18 years: 10 mg Intranasal (see Emed): 0.3-0.5 mg/kg, max dose 10 mg	Buccal: 15-30 minutes Intranasal: 3-5 minutes	Buccal: 15-30 minutes Intranasal: 10 minutes	Buccal, 5-9 years: 15 mg Buccal, 10-18 years: 20 mg Intranasal: 20 mg	Monitor respiratory rate and SpO2. For IN administration, use an atomiser with IV formulation and see Emed Protocol (https://emed.ie/Analgesia/IN_Protocol.php).
Lorazepam (benzodiazepine)	PO: Age <12 years/<40 kg: 0.5-1 mg Age >12 years/>40 kg: 1-2 mg 4-8 hourly IM: Age <12 years/<40 kg: 0.5-1 mg ¹³ Age >12 years/>40 kg: 0.5-2 mg ¹³	PO: 15-30 minutes IM: 20-40 minutes	PO/IM: 2 hours	PO/IM: 4 mg	Slower onset of action and half- life than Midazolam. Avoid in delirium. Do not give with olanzapine due to risk of respiratory depression.
Olanzapine (atypical anti-psychotic)	Orodispersible route preferred PO/IM: Age 4 to <6: 1.25 mg for one dose Age 6-12 years: 2.5 mg-5 mg for one dose Age >12 years: 5 mg-10 mg for one dose	PO: 2-4 hours IM: 15-30 minutes	PO: 5-8 hours IM: 15-45 mins	10-20 mg depending on antipsychotic exposure Contact Psychiatry/Paediatric consultant if using ≥ 10 mg	Do not give PO within 1-2 hours of any BZD due to risk of respiratory depression. Requires ECG as soon as possible. May prolong QTc interval.
Risperidone (atypical anti-psychotic)	PO: 5- 12 years/<40kg: 0.25 mg-0.5 mg ≥12 years/≥ 40 kg: 0.5 mg-1 mg	1 hour	PO: 1-2 hours	<50 kg: 1 mg >50 kg: 2 mg	Can cause restlessness/agitation in higher doses. Requires ECG as soon as possible. May prolong QTc interval.
Procydiline (anti-cholinergic)	IM/IV: <2 years: 0.5-2 mg for one dose 2-10 years: 2-5 mg for one dose 10-18 years: 5-10 mg for one dose	5-20 minutes	IM/IV: 1-2 hours	Discuss with Senior Clinicians	Psychotic episodes may be precipitated. Anti-cholinergic side effects.
Benzatropine (anti-cholinergic)	IM/IV: ≥3 – 12 years: 20-50 micrograms/kg (max single dose 2 mg) bolus over 1-2 minutes ≥12 years: 1-2 mg bolus over 2 minutes	5-20 minutes	Limited evidence	Discuss with Senior Clinicians	Anti-cholinergic side effects. Contra-indicated in children < 3 years of age. Avoid in GI obstruction, myasthenia gravis, narrow-angle glaucoma.
Flumazenil (benzodiazepine antagonist)	IV: 10 micrograms/kg repeated at one minute intervals as required up to five doses with anaesthetic support (Max. single dose 200 micrograms)	1-2 minutes	IV: 6-10 minutes	50 micrograms/kg per course to max of 1 mg	Contraindicated in life threatening conditions (e.g. raised intracranial pressure, status epilepticus) controlled by benzodiazepines. Monitor for re-sedation.

ADVERSE EFFECTS

- Airway obstruction
- Respiratory depression: Benzodiazepines, Olanzapine
- Extrapyramidal reactions/dystonic reactions: Risperidone, Olanzapine
- Neuroleptic Malignant Syndrome/hypertension: Risperidone, Olanzapine
- Paradoxical reactions (e.g. increased agitation, hyperactivity, etc.): Benzodiazepines

PHARMACY CONTACT DETAILS (8AM- 5PM)

ED Pharmacist (General): 087 2040676

Paediatric Pharmacist: 086 1727994 / 087 1622045

Central Pharmacy: 021 4922146 / 021 4922542 /
021 4920181

ED Pharmacist (Paediatric): 087 1818059

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