THE DOPE ON STREET DRUGS

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Disclosure

- I have no conflict of interest to declare.

Objectives

- The street is a big place... We will focus on:
  - Common drugs, greatest harm
  - Practical knowledge: managing acute/chronic clinical effects, drug interaction considerations
- Learning objective: Upon completion of this session, the participant will be able to identify at least one clinically important effect of each of the drugs discussed.

“Street” drugs in BC

- Illicit drugs
  - Cannabis
  - Cocaine
  - D-Methamphetamine, MDMA
  - Heroin, Doda (ground poppy pods)
  - Other: GHB, (uncommon, emerging? piperazine derivatives, synthetic cannabinoids)
- Prescription drugs
  - Diverted oxycodone, morphine, benzodiazepines
  - Imported / counterfeit Rx sildenafil, ketamine

Stimulants- Meth & Cocaine

D-Methamphetamine
- “Meth”, “Crystal”, “Ice”
- Smoked or injected (ingested, nasal insufflation)
- Manufactured in clandestine labs (domestic)

High risk groups
- Poly-substance users
- Street involved youth
- Urban MSM (sildenafil + meth)

Cocaine
- Smoked (“crack”), injected, nasal insufflation (cocaine HCl)
- Coca leaf extract; imported

Image may be viewed at Smokemeth

- Safer smoking: 1
- Pyrex/glass pipe (no chips, cracks)
- Brass pipe screen
- Plastic or rubber mouthpiece

Image may be viewed at
(accessed 10-Nov-2011)
Stimulants - Meth & Cocaine

- Rapid onset
  - Injection > smoking >> mucous membrane >> oral
- Short duration leads to repeated dosing to maintain effect (binges, hours-several days).
  - Methamphetamine duration > cocaine
  - Cocaine eliminated via hydrolysis & esterases
  - Cocaine + ethanol → cocaethylene (longer t½)
  - Amphetamines metabolized via CYP-2D6

- ↑ ↑ dopamine
  - Acute: euphoria, psychomotor stimulation
  - Chronic: addiction (can happen rapidly), movement disorders
- ↑ ↑ norepinephrine
  - tachycardia, hypertension, vasoconstriction
- ↑ excitatory amino acids, serotonin
  - Cocaine also Na+ channel blocker

The High

- Euphoria, ↑ alertness, mild ↑ HR & BP
- Euphoria/ dysphoria (agitation, anxiety)
  - ↑ temp, ↑ ↑ HR & BP, chest pain
- Psychosis, delirium, aggression, seizures, severe hyperthermia, rhabdomyolysis, stroke, cerebral hemorrhage, myocardial infarction

Increasing dose

Stimulants - Managing the High

- Control agitation with benzodiazepines (will also ↓ temp, HR, BP, control seizures)
  - Benzodiazepine IV (IM), may require high dose
  - “Low stimulus” environment, but monitor!
  - Avoid antipsychotics
    - If +++ aggression, psychosis give benzos first then LOW dose antipsychotic e.g. droperidol
  - Short term physical restraint only until sedated
  - Risk of rhabdomyolysis if fighting restraints
- Monitor body temp and CK

The Crash

- Eventual depletion of neurotransmitters.
  - Hypersomnolence
  - Depression, anhedonia, lethargy
  - Cravings for more stimulant drug
- Supportive care, nutrition, addiction counselling

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**The Abyss**
- Highly addictive; repeated binge - crash cycles
  - Malnutrition, wasting
  - Poor hygiene → skin infections, “meth mouth”
  - HIV, Hep C, other sexually transmitted diseases
  - Disordered sleep, paranoia, hallucinations (formication), repetitive behaviours/ movement disorders (“tweaking”)

**Cocaine & Levamisole**
- *Most* cocaine samples include levamisole
  - Enhance euphoric effect? (Metabolite aminorex)
- Levamisole mediated toxicity in cocaine users:
  - Agranulocytosis, neutropenia
  - Necrotizing vasculitis (anti-neutrophil antibodies)
- Auto-immune disorders?
  - Increased risk associated with HLA-B27 genotype

**MDMA – “Ecstasy”**
- 3,4-Methylenedioxymethamphetamine
  - Serotonergic amphetamine; mood elevation
  - ↑dose: classic amphetamine effect
  - Jaw clenching, SIADH/ water intoxication*
- Treatment
  - Benzodiazepines (as for meth)
  - Serotonin syndrome: if hyperthermia, muscle rigidity uncontrolled by benzos, paralyze & intubate
  - Maintain hydration; CAUTION Hyponatremia*

**Ketamine**
- Nasal insufflation (“bumps”)
  - Often in combo with other drugs e.g. MDMA
  - CNS: low dose euphoria, sedation, nystagmus; high dose dissociative state, hallucinations
- Metabolized via CYP-2B6
- Abdominal cramping, epigastric pain
- Urinary tract injury with chronic use
  - Cystitis, dysuria, incontinence
  - Tx: rule out UTI, stop ketamine, pain management

**GHB – gamma hydroxybutyrate**
- Endogenous substance, analogue of GABA
  - Metabolized to CO2 & H2O via Krebs cycle
- Club drug, cheaper alternative to alcohol
  - Euphoria, CNS depression
  - Sudden awakening→ agitation
  - Regular abuse can lead to dependence
  - Withdrawal syndrome: tremor, insomnia, anxiety
- Difficult to detect in clinical samples short t½
- Supportive care of acute OD (ABCs, hydration)
Drug facilitated assault

- “Someone put something in my drink…”
  - ALCOHOL!
- GHB, zopiclone, short acting benzodiazepines
- NOT flunitrazepam (Rohypnol™, “roofies”); not found locally.

Drug interactions- general approach¹²-¹⁴

- An opportunity for education, harm reduction
  - If no info, consider p-kinetics, p-dynamics
  - Avoid/ minimize recreational drug use, especially while the body adapts to the new Rx medication
  - Encourage self-monitoring, friends monitoring
  - Avoid scare tactics, moral judgement
  - The patient might decide to stop taking the Rx medication when using recreational drugs
  - Treat underlying problems that drive drug use

Selected References