

SMART DRUGS

- NATURAL
- SYNTETIC

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Smart drugs

- What are smart drugs - whole confusion
- Some think they are energy drinks or stimulant tablets
- Other think of them as drugs derived from organic material (hxejjex)

Smart drugs - droghe furbe

- Law is not clear
- The mentality is that Natural = good
- Although they are derived from natural substances their consumption can have serious mental and physical effects

Smart drugs classification

- Classification based on methods of consumption
- Classification based on chemical derivation

Smart drugs classification

- Tablets
- Drops
- Drinks
- Infusions
- Concentrated medicinal-effects will be more harmful-codeine based cough mixtures

Smart drugs classification chemical

- Caffeine based
- Ephedrine based
- Aphrodisiacs

Caffeine

- Natural product found in coffee, tea, coca, cacao, guarana and malt
- It is an alkaloid CNS stimulant
- Basic product in a lot of products i.e. drinks and sweets

Caffeine

- Energy drinks - caffeine and taurine
- Potentiated effects with alcohol drinks
- Vodka - mixtures targeting women
- Long term use produces dependency

Ephedrine

- Natural alkaloid-derived from plant ephedra
- Chemically structure similar to methamphetamine
- Used to be used a lot in slimming medicinal preparations and athletic enhancers
- Just used as a stimulant

Ephedrine

- Acts on the sympathetic nervous system
- Provokes an excitatory state
- Anxiety and confusion
- Insomnia
- Psychotic states
- Myocardial infarctions and strokes

Ephedrine

- FDA-TOTAL BAN ON EFEDRINE BASED PRODUCTS

APHRODISIACS

- PLANT DERIVED PRODUCTS
- DAMIANA

ECO-DRUGS

- Psychoactive products derived from plants i.e. not lab produced
- Anthropological and traditional medicines
- Problem with these chemical is that the change in there use i.e. used mainly the abuse
- Saliva Divinorum

Smart drugs effects

- Nausea and vomiting
- Anxiety states
- Palpitations
- Fits
- Psychosis
- Withdrawals

Smart drugs effects

- Non-therapeutic use
- Abuse adverse side effects short term or long term
- Abuse effects is improvable

Inhalants

- Domestic products-difficult to classify as drugs
- Easy to obtain and potentially are toxic
- Most likely users are adolescents
- Hundreds of these products

Inhalants classification

- Solvents industrial and domestic
- Acetone in varnishes, petrol, glues
- Gas
- Butane, deodorants, ether
- Nitrates
- House deodorants, ante-freeze poppers - now illegal

Inhalants effects

- Absorbed rapidly via lungs and straight to brain
- Effects lasts for a few minutes
- Psychoactive effects similar to alcohol i.e. difficulty to talk, co-ordination problems, euphoria, vertigo
- Repeated inhalation will cause frontal lobe problems i.e. disinhibition
- Insomnia loss of control and severe headaches

Inhalants effects

- Rapid elimination
- Absorbed in brain fat
- Absorption in the myelin sheath
- Prolonged use may cause demyelination i.e. multiple sclerosis signs and symptoms
- Long term use –hepatic failure permanent brain damage polineuropathy

Inhalant use among delinquent adolescents

- This study shows that IUDS (inhalant use disorders) are highly prevalent among youth in the juvenile justice system, highlighting the importance of screening, prevention and treatment in this setting.

- *Published by Laurie Barlay MD 04/29/2009*

Spice Gold smoking mixture

- Marketed since ~ 2006; imported from China
- Contains unidentified herbal matter
- The claimed plant constituents are innocuous
- About €20 for 30g
- Produces a 'cannabis-like' effect
- Related products: Yucatan Fire, Spice Diamond etc.

'Spice' – recent developments

- December 2008: Analysis by THC Pharma, Germany showed Spice contains JWH-018 and other synthetic cannabinoid receptor agonists
- January 2009: Germany controls JWH-018 and several CP compounds under narcotic laws. Similar action by Austria using medicines legislation

'Spice' – recent developments

- February 2009: France controls 5 synthetic cannabinoids under narcotic laws
- May 2009: Controls planned in further MS

Detecting new psychoactive substances

Problem areas:

- Pure reference materials and analytical data are often not available in the early stages
- Not all forensic/toxicological laboratories in the EU have the means to identify new substances – the EWS often relies on those with NMR spectroscopy

Detecting new psychoactive substances

- Examining non-scheduled drugs is not a priority for forensic science organisations in some countries
- Some substances may be active at doses below 1mg; detection in body fluids if not in dosage units may be challenging

Can new substances be anticipated?

- The Early Warning System is reactive
- But almost all new psychoactive substances were previously described in the scientific literature
- The Internet may provide information on new substances:
 - Drug ‘chat rooms’
 - Purchases from website selling ‘legal highs’
 - We could use this knowledge and devise a set of rules based on previous experience

A rule-based system for prediction?

- Synthetic drugs will continue to dominate – herbal products will remain uncommon
- Precursor chemicals or essential reagents should be commercially available or readily synthesised and not controlled
- The method of synthesis should be straightforward

A rule-based system for prediction?

- The end-product should be either a stimulant or have MDMA-like properties, but not be a synthetic hallucinogen
- The end-product should be active orally and the required dose should be no more than 100mg
- Further PIHKAL substances are unlikely to appear
- More synthetic cannabinoids can be expected

Summary

- A formal mechanism, to monitor, assess and control new drugs has been in operation within the EU since 1997
- In that time over 90 new psychoactive substances have been reported
- Most are synthetic compounds; plant/herbal products remain uncommon
- Most have not been widespread and most did not survive for long on the illicit market
- Risk assessments were carried out on 10 substances, of which 7 were recommended for control

Summary

- Nearly all presented analytical challenges when first encountered
- For many, little was and still is known about their pharmacology/toxicology
- Nearly all substances had been described in the scientific literature, often many years ago; they are effectively 'failed' pharmaceutical agents
- In the early years, most substances were either phenethylamine or tryptamine derivatives

Summary

- In the past 5 years there has been a great diversity of chemical structures, although most are stimulants, or are “MDMA-like’ or, less-commonly, hallucinogens
- Rather than be reactive, it should be possible to anticipate new substances given a knowledge of the literature and the use of rules