

Dangerous drugs online

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SUMMARY

The risks associated with self-medication have been amplified by the ability to order prescription, non-prescription and complementary medicines online.

Products bought over the internet may be counterfeits or contain undeclared ingredients. Undeclared pharmaceuticals are increasingly being found in complementary medicines.

Marketing of medicines on the internet has not been limited to therapeutic drugs. There is a growing variety of new recreational or 'designer' drugs.

Without effective methods for detecting emerging drugs and with limited knowledge of their effects on users, online ordering presents a new challenge to public health.

Introduction

Prescription and non-prescription medicines can be bought legitimately online within Australia. Importation of prescription drugs into Australia is possible as long as regulatory requirements are met, although some internet transactions may involve counterfeits and fraud. Some of these products contain little, if any, active ingredient. In contrast 'herbal' and 'traditional' remedies or 'dietary supplements' sold over the internet may contain undeclared chemicals, prescription drugs or their analogues. The products most commonly marketed fraudulently on the internet include treatments for hair loss, impotence and obesity.

The Therapeutic Goods Administration (TGA) cannot test all the products on the Australian market, let alone the global range of products available online, to exclude all potentially harmful contaminants. Nonetheless, the TGA issued several alerts in 2011 for products containing undeclared drugs for the treatment of impotence.¹

Weight loss products

The US Food and Drug Administration's (FDA) initiative against contaminated weight loss products revealed 72 products containing undeclared drugs

and chemicals.² In most of them the undeclared active ingredient was sibutramine, a prescription-only medicine which was withdrawn from the Australian market in October 2010. Some of the products identified by the FDA recommended what equated to more than three times the recommended daily dosage of sibutramine, exposing consumers to an increased likelihood of serious adverse events.

The problem of contaminated products first came to the attention of our laboratory in 2008 following the admission of a patient to a psychiatric unit with drug-induced psychosis after taking slimming capsules. Withdrawal of the capsules produced a complete resolution of symptoms within several days. Subsequent testing of the capsules by gas chromatography mass spectroscopy detected the presence of sibutramine. Later that year another patient was admitted with florid psychosis following the use of a different brand of slimming capsule. Testing detected the primary urinary metabolite of sibutramine³ and the capsules were found to contain the drug.

New recreational or 'designer' drugs

The ordering of drugs over the internet has not been limited to medicines. Substances can be produced to circumvent the laws defining illicit drugs.

Following a 'shortage' of ecstasy (3,4-methylenedioxymethamphetamine or MDMA), exploitation of loopholes in legislation permitted a rapid increase in the use of cathinone derivatives which are structurally similar to amphetamines. These substances are suspected in the deaths of up to 25 people in the UK and the class was banned there in 2010.⁴ Of particular concern were mephedrone and methydone, analogues of methamphetamine and ecstasy which were already illegal in Australia. Mephedrone was the most popular 'legal' drug sold on the internet in Sweden until legislation was tightened.⁴ Naphyrone analogues, potent monoamine neurotransmitter reuptake inhibitors,⁵ were also banned in the UK in 2010, but new psychoactive drugs continue to emerge. As these substances are less well known they are hard to identify and their effects are unpredictable.

Detection

Our laboratory's first encounter with novel designer drugs predated the use of the internet as an effective tool for their marketing. The epidemic of

4-paramethoxyamphetamine (PMA) or 'death' related poisonings in South Australia in the 1990s was believed to be responsible for the deaths of up to 30 people.⁶ Fortunately, the structure of PMA is similar to that of amphetamine so it is strongly crossreactive with the immunoassay screening methods used by most toxicology laboratories in Australia. Any re-emergence of this drug should be easily detected.

The structure of mephedrone and methydone sufficiently reduces their immunoreactivity, so drug testing may produce false negative results for sympathomimetics, even in overdose. The 2-aminoindane class of sympathomimetics may be

sufficiently different structurally to evade not only detection but also the Australian legal description of analogues of controlled substances.

Conclusion

Many medical products are sold over the internet. Some of these products do not contain what the consumer expects. The internet may also be used to sell psychoactive substances with unpredictable effects. <

Conflict of interest: none declared

See also page 29, Medicines Safety Update: *Caveat emptor* 'buyer beware' – the risks of purchasing unregistered medicines online. Aust Prescr 2012;35:29.

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Book review

Therapeutic Guidelines: Neurology. Version 4.

Melbourne: Therapeutic Guidelines Limited; 2011. 242 pages.

Neurology is a highly specialised branch of medicine that never ceases to amaze with its clinical presentations. It has always had the potential to pose multiple clinical challenges to most practitioners. For these reasons, Therapeutic Guidelines: Neurology for me has proven to be the perfect mentor. The chapters provide clear, concise and evidence-based information on both the pharmacological and non-pharmacological management of neurological conditions encountered frequently in general practice. 'Getting to know your drugs' is a brief but complete summary of drugs used in neurology, with reliable information on the important drug interactions and

precautions to be considered when treating patients. The appendices on monitoring antiepileptic drugs and sources of information are of great clinical value, as is the section on pregnancy and breastfeeding. Regular use of tables and flow charts makes it easy to read and user-friendly.

Therapeutic Guidelines: Neurology is the ultimate neurology reference tool. I recommend it for all medical practitioners, medical students and even allied health professionals, such as physiotherapists and occupational therapists, involved in the rehabilitation of patients with chronic neurological disease. All essential information required for a multidisciplinary and holistic approach to the management of patients is contained in this great resource.

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