



The New International Epidemic of Toxic Adulterants in Drugs of Abuse

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Introduction

Drugs of abuse historically have been adulterated with non-toxic materials such as lactose and glucose to increase profitability. For decades adding pharmaceuticals such as stimulants to augment the effects of drugs was also known. But now a new phenomenon emerged and banned toxic adulterants are added to drugs of abuse that cause agranulocytosis, cancers and parkinsonian symptoms.

Support

This ongoing research is a collaborative effort between the authors and the U.S. Department of State's Bureau for International Narcotics and Law Enforcement and the Colombo Plan

References

Maldaner, O.A., Botelho, E.D. Zacca, J.M. (2015) Brazilian Federal District Cocaine Chemical Profiling-Mass Balance Approach and New Adulterant Routinely Quantified, Aminopyrine, Journal of the Brazilian Chemical Society, Vol 26, No.6, 1678-4790.
Muirhead, TT (2011) Toxic Effects of Levamisole in a Cocaine User, N Engl J Med 364:24, e52
Verebey, K, Martin DM, Gold MS (1982) Drug Abuse: interpretation of Laboratory Tests, In Hall W. ed. Psychiatric Medicine Washington DC: US Gov. Printing Office, 155-167

Methods

Street drug and urine samples were collected in "Crackolandia", a drug free use area in Sao Paulo, Brazil and tested for street drugs and toxic adulterants. Street drug samples were also collected and tested for toxic adulterants in Argentina, Peru, Ecuador and South Africa.

Example DATA (ng/ml) Urine

#	Phen	Lev	Amin	Benz	Coc
6C		24		>5000	
7C	>1000	184	14	>5000	>5000
8C	347		11	>5000	>5000
10C	>1000	33	17	>5000	>5000
17C	53	53		>5000	2115
21C	>1000	910		>5000	>5000
23C	519		14	>5000	
29C	>1000	72	33	>5000	>5000
30C	941	980		>5000	>5000
35C	>1000	123	14	>5000	>5000
40C		>1000		>5000	956
42C	>1000	11	19	>5000	>5000
44C	>1000	164	33	>5000	>5000
45C	34	35		>5000	715
47C	22		12	>5000	
54C	937		152	>5000	
55C	>1000	235	132	>5000	>5000

Results

The majority of street drug samples from all counties contained the above toxic adulterants and other multiple toxic adulterants including but not limited to Diltiazem in heroin samples that lowers heart rates and one case of Maneb, a fungicide that can cause Parkinson-like symptoms. Urine samples of from Brazil crack cocaine users were 77% positive for Phenacetin, a banned carcinogen, 54% for Aminopyrine and 26% for Levamisole both cause agranulocytosis.



Conclusions

The addition of multiple toxic adulterants to street drugs is now commonplace. Neurological, psychiatric and medical consequences are increasingly evident. Adulterants must be included when evaluating substance abuse patients in emergency and treatment setting. Knowledge of the local, State, and Country specific illicit drug adulterants is important for prevention, diagnosis, and treatment.

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The authors have no financial disclosures