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Drug abuse and gas chromatography/mass spectrum

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Background & Aim: Drug toxicology tests are most commonly performed on urine, since most drugs and their breakdown products are excreted in the urine at higher concentration. The aim of this work is to evaluate the usefulness of using urine immunoassay kits for detection of some drugs of abuse, and study the correlation between the results obtained by EMIT and GC/MS techniques.

Materials & Methods: A total number of 449 inhabitant urine samples were collected from patients admitted to emergency hospital, Mansoura University. A total of 449 urine samples were analyzed by EMIT and GC/MS for benzodiazepine, barbiturate, opiate and cannabinoid.

Results: Obtained results revealed that urine immunoassay kit is useful for rapid preliminary screening of abuse drug. GC/MS results confirm that 245 samples (54.56%) are positive of the total number of samples. These positive samples by GC/MS were as follows- benzodiazepines: 159 ((clonazepam, oxazepam, temazepam), barbiturates: 58 (thiobarbiturate, butobarbital, seconal) and opiates: 28 (methadone metabolite)).

Conclusions & Recommendations: GC/MS analysis must be done for accurate identification and confirmation of EMIT results. Also, it is recommended as the most suitable technique for obtaining optimum analytical results.