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ORIGINAL ARTICLE

Use of urine drug screening in the emergency department of a paediatric hospital☆,☆☆

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Received 16 November 2016; accepted 30 January 2017
Available online 21 November 2017

KEYWORDS
Toxicology screening;
Emergency department;
Drugs of abuse;
Paediatrics

Abstract
Objective: To describe the situations in which urine drug screening is used in a Paediatric Emergency Department (ED). An analysis is also made on its potential usefulness on whether it changes the patient management, and if the results are confirmed by using specific techniques.
Methodology: A retrospective study was conducted on patients under the age of 18 attended in the ED during 2014 and in whom urine drug screening was requested. Depending on the potential capacity of the screening result to change patient management, two groups were defined (potentially useful and not potentially useful).
Results: Urine drug screening was performed on a total of 161 patients. The screening was considered not to be potentially useful in 87 (54.0%). This was because the clinical history already explained the symptoms the patient had in 55 (34.1%) patients, in 29 (18.0%) because the patient was asymptomatic, and in 3 (1.9%) because the suspected drug was not detectable in the screening. The drug screening results changed the patient management in 5 (3.1%) cases. A toxic substance was detected in 44 (27.3%). Two out of the 44 that were positive (2.1%) were re-tested by specific techniques, and presence of the toxic substance was ruled out in both of them (false positives).
Conclusions: Most of the drug screening tests are not justified, and it is very infrequent that they change patient management. It is very rare that the results are confirmed using more

☆ Please cite this article as: Ferrer Bosch N, Martínez Sánchez L, Trenchs Sainz de la Maza V, Velasco Rodríguez J, García González E, Luaces Cubells C. Utilidad de las técnicas de cribado de tóxicos en orina solicitadas desde el servicio de urgencias de un hospital pediátrico. An Pediatr (Barc). 2018;88:19–23.

☆☆ Previous presentation: this study has been presented at the 20th Meeting of the Sociedad Española de Urgenciasen Pediatría; April 2015; Bilbao, Spain.

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specific methods. Urine drug screening tests should be restricted to particular cases and if the result has legal implications, or if the patient denies using the drug, it should be followed by a specific toxicological study to provide a conclusive result.

PALABRAS CLAVE
Cribado toxicológico;
Urgencias;
Drogas de abuso;
Pediatría

Utilidad de las técnicas de cribado de tóxicos en orina solicitadas desde el servicio de urgencias de un hospital pediátrico

Resumen
Objetivo: Describir las situaciones en las que se solicita cribado toxicológico en orina desde un servicio de urgencias pediátricas. Determinar si la prueba es potencialmente útil, si conlleva un cambio en el manejo del paciente y si los resultados se comprueban mediante técnicas específicas.
Metodología: Estudio retrospectivo de los pacientes menores de 18 años atendidos en urgencias durante el año 2014 a los que se solicitó cribado de tóxicos en orina. Se definieron 2 grupos en función de la potencial capacidad de modificar el manejo del paciente (potencial utilidad y ausencia de utilidad).
Resultados: Se recogieron 161 pacientes. En 87 casos (54,0%) el cribado de tóxicos se consideró sin potencial utilidad. En 55 pacientes (34,1%) la falta de utilidad fue debida a que la anamnesis ya explicaba la sintomatología presente, en 29 (18,0%) a que el paciente se encontraba asintomático y en 3 (1,9%) a la sospecha de intoxicación por una sustancia no detectable mediante esta técnica. El resultado ocasionó un cambio de manejo en 5 casos (3,1%). Se detectó algún tóxico en 44 pacientes (27,3%). Se solicitó confirmación con técnicas específicas en 2 (1,2%). Ambos fueron falsos positivos.
Conclusiones: La mayor parte de los cribados de tóxicos solicitados no están justificados y es infrecuente que condicionen un cambio en el manejo del paciente. La confirmación mediante técnicas específicas es inusual. Su uso debe restringirse a casos concretos y, siempre que pueda tener repercusiones legales o el paciente niegue el consumo, debe seguirse de un estudio toxicológico específico que aporte un resultado concluyente.

Introduction

Urine drug screening is often requested in Paediatric Emergency Departments (PEDs) for patients with symptoms suggestive of poisoning. This type of screening is quick and easy to perform, but has significant limitations. Chief among them are the potential cross-reactivity with structurally similar compounds (false positive), the potential for false-negative results, and the influence of detection times for the involved substance in urine, with positive results not always corresponding to recent consumption.[1–6] Another factor that needs to be considered is that the concentration of urine may affect test results.[2,4] Therefore, it is important to ensure that results are interpreted correctly, considering them tentative until they are confirmed by means of a technique with a higher specificity, such as mass spectrometry.[2–8]

The aims of this study were:

1. To describe the situations in which urine drug screening is requested in the PED, determining those where it may be useful and its performance is justified.
2. To assess whether performance of toxicology tests affects how patients are managed.
3. To assess whether confirmation of results is requested by the PED and analyse the occurrence of false positives and/or negatives.

Methods

We conducted a retrospective study in the PED of a tertiary women's and children's hospital that receives approximately 100,000 paediatric visits a year.

We included all patients aged less than 18 years seen in the PED in 2014 that underwent urine drug screening. We selected the sample by reviewing the Laboratory records for rapid test orders.

This laboratory uses 2 types of methods to detect drugs in urine:

1. Automated/semiquantitative methods: they produce a quantitative result, but results are reported as positive or negative based on whether the detected level exceeds a specific threshold for a