

Investigation of interfering factors causing false negative result in drug diagnostic testing

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Abstract

Background and Aim: Drug diagnostic testing is necessary for pre-employment exams, issuing qualification certificate, driving and some important jobs license renewal, and pre-marriage exams. Due to the importance of this issue, this study was conducted to investigate the interfering factors causing false negative result in drug diagnostic testing.

Methods: This is a descriptive study which was carried out on 200 positive urine samples in terms of Morphine, Amphetamine and Methamphetamine. In this study, the effect of 10 possible interferer materials including salt, vinegar, lemon juice, verjuice, hand washing liquid, dishwashing liquid, bleaching liquid, washing powder, baking soda and obligation on pH and specific weight of urine was examined. To confirm the results and initial screening, two thin layer chromatography and rapid immunochromatographic tests were used, respectively. Data were analyzed using SPSS 21 software.

Results: The dilution of 1:2500 was obtained as the highest dilution of urine samples with positive result in drug diagnostic test. Interfering factors such as salt and baking soda increased urine specific weight. Vinegar, lemon juice, obligation and verjuice decreased urine pH, while bleach liquid, washing powder and baking soda increased pH of urine.

Conclusion: Regarding the identification of some factors affecting the urine drug testing and misleading diagnostic results, it is recommended to search for methods to detect further possible deception cases in future studies.

Keywords: false negative, Morphine, Amphetamine, Methamphetamine, interfering factors