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Pre-Analytical Error for Forensic Medicine Laboratory Test

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Abstract

Pre-analytical error is a common problem in laboratory medicine. This problem is also a big concern in forensic medicine laboratory investigation. In this specific short article, the author specifically discusses on the pre-analytical error problem in forensic laboratory medicine test. Practitioner should recognize and aware for good clinical practice in pre-analytical sample collection and post – analytical interpretation of forensic laboratory medicine test result regarding to the possible problem of pre-analytical error.

Keywords: Pre-analytical; Error; Forensic medicine

Introduction

The error is an important problem in medicine. It can affect the quality of the diagnosis and treatment. Therefore, it is needed to deal with the error. The error in medical laboratory investigation is not uncommon [1]. In laboratory medicine, the pre-analytical error is more common than the analytical and post-analytical errors. This problem can be seen in any medical laboratories regardless of accreditation and certification [2].

Pre-analytical error is a common problem in laboratory medicine. This problem is also a big concern in forensic medicine laboratory investigation. In this specific short article, the author specifically discusses on the pre-analytical error problem in forensic laboratory medicine test. Practitioner should recognize and aware for good clinical practice in pre-analytical sample collection and post – analytical interpretation of forensic laboratory medicine test result regarding to the possible problem of pre-analytical error.

Pre-Analytical Error in Forensic Medicine Laboratory

Similar to any laboratory tests, the pre-analytical error is possible in forensic medicine laboratory investigation. However, there are some differences from other kinds of laboratory tests. In forensic medicine, if the specimen collection is directly from cadaver, the issue on pre-analytical patient preparation is omitted. But there is the new problem on the condition of the specimen, which might be problematic due to rotten process. As noted by Skopp, “Some general requirements for postmortem sampling are given based on references about specimen collection issues, for a harmonized protocol for sampling in suspected poisonings or drug-related deaths does not exist [3].” Similar to other laboratory tests, the interference can be seen in specific forensic laboratory investigations and this should be kept in mind during analysis and interpretation of the results [4].

How to Deal with the Pre-Analytical Problem in Forensic Medicine

Similar to other laboratories, the quality control is required for forensic medicine test. The good clinical practice guideline has to be followed. The internal quality control, external quality assurance, quality management and quality improvement process are required [5]. Since the pre-analytical error is usually related to human factor, the quality of the human, the practitioner, becomes the biggest issue for management. As noted by Ersoy et al., a good system is required to assure the full usefulness of forensic laboratory investigation [6].

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