

Quality Assurance of Samples for Therapeutic Drug Monitoring and Clinical Toxicology

Abstract

The integrity of samples employed for therapeutic drug monitoring (TDM) and clinical toxicology (CT) has a significant impact on the quality of data obtained for clinical decision-making. Samples usually employed for TDM and/or CT are obtained either using invasive or non-invasive approaches, and these include blood, plasma, or serum (invasive approaches), urine, and saliva (non-invasive approaches). Lack of standard operating procedures for samples in the pre-analytical stage could lead to variabilities in analysis results because of factors such as haemolysis (blood samples), inappropriate cooling and storage (urine samples), and desiccation of saliva. Therefore, assuring the quality and integrity of samples obtained for TDM and CT studies is a requirement for reliable data suitable for informed clinical decisions for patients as well as medical emergencies. It is an irrefutable emphasis that the assurance of the quality of samples meant for TDM and CT assessments correlates strongly with the quality of data obtained for clinical interpretation and implementation of optimized care. This chapter thus addresses major concerns, regarding the quality assurance of samples for TDM and CT..