To compare the results of hematology, blood chemistry, and coagulation tests between two blood sampling methods via venipuncture and peripheral venous catheter” Jeong et al (2019).

Abstract:

AIMS AND OBJECTIVES: To compare the results of hematology, blood chemistry, and coagulation tests between two blood sampling methods via venipuncture and peripheral venous catheter.

BACKGROUND: Laboratory results of the previous studies on blood sampling methods through peripheral venous catheter versus venipuncture are inconsistent. Therefore, it is necessary to better understand the discrepancies between the two blood sampling methods and to provide evidence for practice.

DESIGN: Systematic literature review and meta-analysis were conducted in accordance with the PRISMA reporting guideline.

METHODS: Reviewed articles for this study were searched through database, including PubMed, Cochrane Library, EMBASE, SCOPUS, Web of Science, ProQuest Dissertations & Theses, CINAHL(Cumulative Index to Nursing and Allied Health Literature), and ERIC(Educational Resource Information Centre). Hand-searching was also conducted.

RESULTS: We finally identified 17 studies for a systematic review, and 10 studies out of them were selected for a meta-analysis. A total of 678 participants were included in the meta-analysis. Overall, there was no significant difference in hematology, blood chemistry, and coagulation test values between two sampling methods via venipuncture and peripheral venous catheter.

CONCLUSION: Findings of this study provide substantial evidence that most blood tests via venipuncture and peripheral venous catheter would not be different. Patients will be benefitted by reducing the number of venipuncture if a series of blood tests can be conducted by using peripheral venous catheter. Thus, health care providers may refer to more reliable laboratory results on using peripheral venous catheter for without increasing the risk of bleeding events and pain on blood sampling sites due to frequent phlebotomies.
RELEVANCE TO CLINICAL PRACTICE: The results of this study will be a good evidence to decide blood sampling methods in clinical practice.

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