

Preanalytical Variables of Blood Specimen Collection that Affect Haemolysis Via a Butterfly Needle System by CRN

Identify the impact of underlying preanalytical variables that influence haemolysis of blood samples utilising a

Two-Page Questionnaire



INTRODUCTION

Venepuncture is a common practice in a clinical research setting that is performed by highly qualified and competent Clinical Research Nurse (CRN).

The blood collection process and its preanalytical variables play an important determinant in achieving good quality samples and results. Thus CRNs meticulously collect, handle and transport these blood samples.

METHODOLOGY

- Chinese adults in Healthy Volunteer Trial
- Informed consent obtained

Requisites

- All in compliance with Singapore Guidelines for Good Clinical Practice (SGGCP)
- Requisites, Sample Collection Process & Two-page Questionnaire

RESULTS

Hospital Specialised Haematology Laboratory reported Only 42 (1.2%) of 3,480 samples collected were haemolysed during initial commencement of trial.



Sample Collection

BLOOD COLLECTION PROCESS

PREANALYTICAL VARIABLES

DEMOGRAPHIC DATA

- Age
- Gender
- Occupation

PREPARATORY PHASE

- Period
- Appropriate

Selection

- Stipulate Fasting
- Apparatus Used
- Good Vein

PERFORMANCE

• Compliance to Procedural Steps

PHASE

- Adequate Tourniquet Time
- Competent CRNs' Venepuncture Skills

FOLLOW-UP PHASE

• Transport Blood Samples to Lab within 30 minutes

CONCLUSION

CRNs utilised precision venepuncture skills, stepby-step blood collection techniques with consideration of identified preanalytical variables resulting in minimal impact on haemolysis of blood samples.

standardisation improved Led of to venepuncture techniques, revised Standard Operating Procedure reflecting quality practices, enhanced continuous learning & skills competency for CRNs.

FINDINGS

Majority of respondents were male (76.9%), aged between 31 to 40 years old (40%), with professional/executive background (21.5%), and started fasting at 0200 Hr (95.7%). Most common apparatus utilised in preparation for blood taking was an electric warmer (18.5%). In addition, tourniquet was applied for about 3 minutes (56.9%) whereby Median and Cephalic veins (40.1%) were commonly used for blood taking. Furthermore, 93.9% of cases handled had easy venepuncture access and remarkably fast blood flow (92.9%).

✓ Reputable Phase 1 Clinical Research Unit

IMPACT!

✓ Reliable Data

Efficient Butterfly Needle System

✓ Quality Assurance of Clinical Research **Nurses' Venepuncture Skills**

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