

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

AIM Identify the impact of underlying preanalytical variables that influence haemolysis of blood samples utilising a step-by-step blood collection process via a butterfly needle system performed by Clinical Research Nurse (CRN)



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.

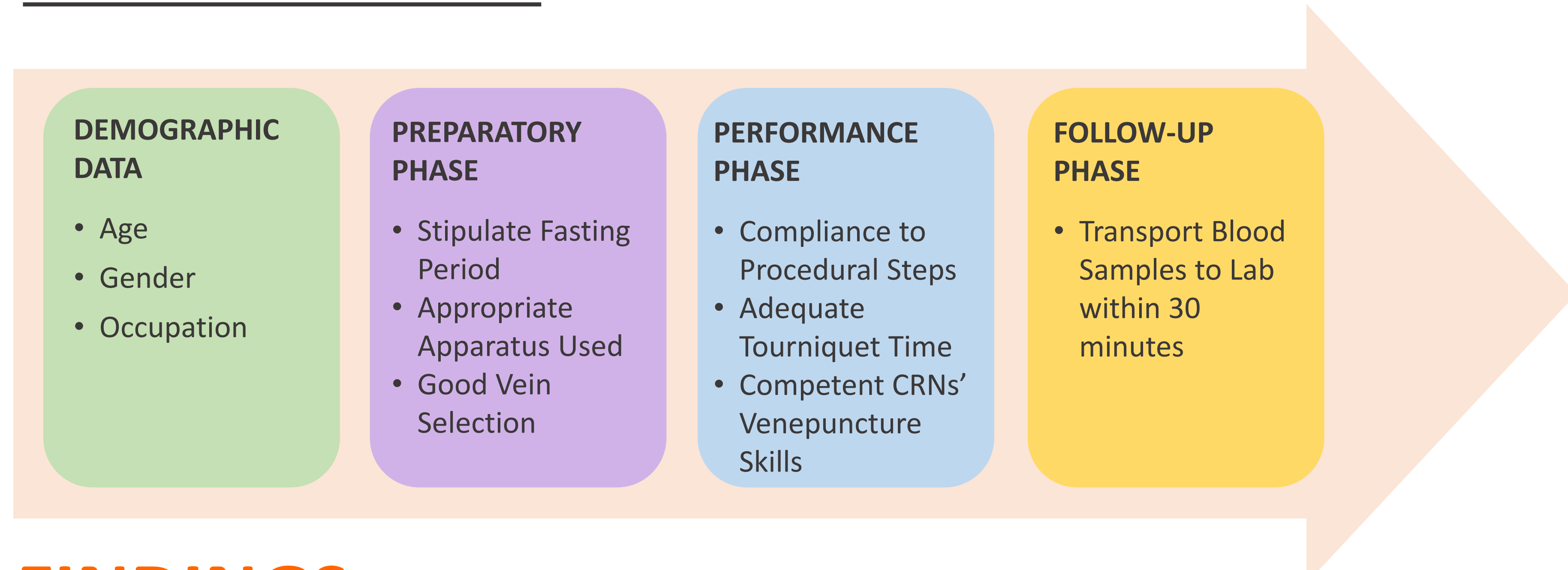
METHODOLOGY

- Chinese adults in Healthy Volunteer Trial
- Informed consent obtained
- All in compliance with Singapore Guidelines for Good Clinical Practice (SGGCP)
- Requisites, Sample Collection Process & Two-page Questionnaire



BLOOD COLLECTION PROCESS

PREANALYTICAL VARIABLES



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%).

RESULTS

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

CONCLUSION

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

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

IMPACT!

- ✓ Reputable Phase 1 Clinical Research Unit
- ✓ Reliable Data
- ✓ Efficient Butterfly Needle System
- ✓ Quality Assurance of Clinical Research Nurses' Venepuncture Skills