International Journal of Medical and Allied Health Sciences

ISSN: 2583-1879
Available at http://www.ijmahs.org/

Review Article

Phlebotomy in Clinical Practices and Allied Healthcare professionals

Shashi Dhar Mehta[1] and Sandhya S. Mehta[2]

[1]Laboratory Diagnostic Services, VCH, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi, India
[2]Department of Microbiology, State Reference Laboratory (HIV Lab.) Lady Harding Medical College & S K Hospital, New Delhi

Article Information: Received on 17-03-2023 Accepted 19-04-2023 Available online 30-04-2023

Abstract

Medical science is growing very fast with the development of new and new products as well as in the field of development of very sophisticated technology along with the development of high-quality instruments. These instruments are helpful not only in the reduction of time but also reduce the cost of test procedure. Daily so many tests are being performed to know the actual cause of disease for that blood is needed. Phlebotomy is the process of making an incision in a vein with a needle. Collection of blood sample for the test is a very crucial method. This should be performed by a trained person only in order to reduce the risk of transmission of the disease. Allied health care personals like medical laboratory technologists are person trained for this purpose.

Keywords: Allied Health Professionals, Venipuncture, Anticoagulant, Hematoma.

1. Introduction

One of the most practiced methods that is commonly used in hospitals and laboratory. Quality of specimen depends upon the methods of collection of specimens. Pseudo positive results are possible if the blood specimen is not collected properly [1]. Preservatives play important role in preservation of specimen depending on the type of tests performed different blood preservatives are used. Phlebotomy is used since long time for the collection of blood [2]. The practice may vary with country to country and with patients also [3].

2. Disinfection of site

Proper disinfection of the skin before collection of blood specimen is must. If right procedure is not adopted it may lead to growth of unwanted skin microflora of the skin. Alcohol or any other skin disinfectants may be used to disinfect the skin prior to collection of blood.

*Shashi Dhar Metha, Laboratory diagnostic services, VCH, Vallabhbhai Patel Chest Institute, University of Delhi
E mail: sdmvpci@gmail.com
ORCID ID: 0000-0002-0000-0000
doi: https://doi.org/10.54618/IJMAHS.2023314

3. WHO guideline implementation

One must follow the guidelines as stated by WHO time to time in order to reduce the risk of contamination as well as to reduce the risk of spread of blood borne pathogens including bacteria fungi and viruses.

3.1 Objectives

The objectives of these guidelines are:
- to reduce the risk during collection of blood.
- to improve knowledge and awareness of the risks
- to increase safe practices and reduce bloodborne pathogens
- to gain patient confidence
- to improve the quality of laboratory tests.

4. Potential Risk

Blood is usually sterile. Bacteria in the bloodstream (*bacteremia*) may indicate a disease, although temporary or transient bacteremia may occur following oral surgery, tooth extraction, etc. to prevent contamination of the blood specimen with indigenous skin flora [4]. Phlebotomy results in potential expose of health workers and patients to blood along with other people. Potential pathogens of blood that can be transmitted easily if proper care in not taken includes Hepatitis B Virus (HBV), Human Immunodeficiency

Virus (HIV) [5,6]. Malaria and syphilis like disease also may be transmitted if a healthy person comes in contact with contaminated blood [7,8].

5. Personal Protecting Equipment's (PPE):

There are personal protecting equipment's to be used while working in laboratory. Depending on risk of infection and type of laboratory based on biosafety levels e.g. level-1, Level-2, level-3 etc. PPE should be used while dealing with blood pathogens or during the collection of blood.

6. Complications

Different complications are observed during or after collection of major cases of haematoma are seen in about 12% of cases [9]. Nerve injury and damage to adjacent anatomical structures occurred infrequently, and syncope occurred in less than 1% of individuals. Vasovagal attacks occurred occasionally, varying from mild to severe; fainting was reported in 5.3% of cases and usually occurred in first-time female blood donors [9].

6.1 Adverse Effects

Haematoma (2-3%)
Vasovagal reaction / Faint (1%)
Delayed Faint / Syncope (1 in10000)
Arterial Puncture (1 in 50000)
Nerve damage

Conclusion

It may be concluded that phlebotomy is the technique most widely used in health care as well as in research sector for the diagnosis and research purposes. One must be careful to avoid the transmission of infection during the process. Research related to effectiveness of disinfectant used before collection of blood from the site are very rare and mor and mor research is needed to find out the use of individual and combined disinfectant used for the disinfection.

Conflict of interest: Author declares that there is no conflict of interest.

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