

CAUSES OF MISLEADING RESULTS IN MEDICAL LABORATORY PRACTICE

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SUMMARY

Misleading result means the use of wrong procedure to achieve an aim occurring in any part of laboratory cycle from test ordering to interpreting of result. Causes of misleading result in medical laboratory is group into three pre-analytical, analytical and post analytical. pre-analytical is any procedure that takes place before analysis. E.g. patient misidentification, improper calibration of tube volume, wrong collection of tube. Analytical phase this error occur during analysis e.g. malfunction of equipment, sample mix up indictable failure in quality control and procedure not followed. Post analytical phase. This error occurs after the test have been conducted and failure in reporting erroneous validation of analytical data, improper data entry failure in reporting, excessive turn around time.

INTRODUCTION

Misleading result means failure of planned action to be completed as intended or use a wrong procedure to achieve an aim, occurring at any part of laboratory cycle, from test ordering, examination to reporting result and appropriate interpretation of test result.

CAUSES OF MISLEADING RESULTS IN MEDICAL LABORATORY PRACTICE

Causes of misleading results in medical laboratory practice is grouped into three.

1. Pre-analytical phase
2. Analytical phase
3. Post analytical phase

PRE-ANALYTICAL PHASE: - Is any procedure that takes place before an analysis. It also describe any variable whose value can effect the outcome of subsequent analysis. Pre-analytical phase account for the majority of errors made in the laboratory test result.

The most common causes of pre-analytical errors are:

1. Patient misidentification
2. Wrong collection tube
3. Test request error
4. Incorrect anticoagulant choice
5. Clotted sample and poor processing
6. Inadequate sample/ anticoagulant
7. Inappropriate test request
8. Insufficient sample

ANALYTICAL PHASE: This phase includes what is usually considered the actual laboratory testing or the diagnostic, procedures processing and products that ultimately provide result.

Misleading result occurs in this phase when there is

1. Malfunction of equipment
2. Sample mix ups
3. Interference
4. Undetectable failure in quality control
5. And procedure not followed

POST ANALYTICAL PHASE: These errors happens after the test is conducted and failure in reporting, erroneous validation of

1. Analytical data
2. Improper data entry
3. Excessive turnaround time
4. Failure in reporting

PREVENTION OF MISLEADING RESULT

1. Appropriate test ordering by physicians
2. Appropriate identification of patient and specimen
3. Appropriate Specimen collection
4. Appropriate transportation and processing
5. Appropriate analytical process quality
6. Appropriate interpretation of laboratory data

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