



Reliability of laboratory Test and it's Applications

Majumder S*

Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur, India

*Corresponding author: Majumder S, Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur, India, Email: majumder68@gmail.com

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Editorial

It is commonly thought that laboratory tests provide two-thirds to three-fourths of the information used for making medical decisions. The reliability of a test refers to its ability to provide consistent results when repeated by the same examiner or when more than 1 examiner tests the same characteristic on the same group of subjects. According to Dr. Michael Laposata, the medical specialty that nearly every practicing physician relies on every day, for which training in many medical schools is limited to no more than a scattered few lectures throughout the entire curriculum, is "laboratory medicine. We will then discuss how laboratory tests are interpreted using a reference interval and its limitations, followed by some brief remarks about the concepts critical difference and neural network. Evidence-based guideline development requires transparent methodology for gathering, synthesizing and grading the quality and strength of evidence behind recommendations.

The Grading of Recommendations Assessment, Development and Evaluation (GRADE) project has addressed diagnostic test use in many of their publications. Most of the work has been directed at diagnostic tests and no consensus has been reached for prognostic biomarkers. The nature of pathology services is changing under the combined pressures of increasing workloads, cost constraints and technological advancement. In the face of this, laboratory systems need to meet new demands for data exchange with clinical electronic record systems for test requesting and results reporting. As these needs develop, new challenges are emerging especially with respect to the format and content of the datasets which are being exchanged. The standard treatment of acute ischemic stroke patients is thrombolytic therapy within 60 minutes of a patient's arrival in stroke center hospitals.

Based on the policy of the Lampang Referral System Committee, blood samples of suspected stroke patients need to be collected before transfer to the stroke center (Lampang Hospital). It was still questionable as to whether these blood samples are valid for clinical use and the present study aimed to confirm or deny their validity. Clinical laboratory test results are a very important parameter in diagnosis, monitoring and screening. 70-80 % of decisions in diagnosis are based on laboratory results and more and more laboratory analyses are requested. Thus a lot of data are provided and it is therefore imperative for patient care (and safety) that the clinicians are familiar with the tests and with interpretation of the results.

Validity and reliability relate to the interpretation of scores from psychometric instruments (eg, symptom scales, questionnaires, education tests, and observer ratings) used in clinical practice, research, education, and administration. Evidence to support the validity argument is collected from 5 sources:

Content: do instrument items completely represent the construct?
 Response process: the relationship between the intended construct and the thought processes of subjects or observers
 Internal structure: acceptable reliability and factor structure
 Relations to other variables: correlation with scores from another instrument assessing the same construct.
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2. Response process: the relationship between the intended construct and the thought processes of subjects or observers
3. Internal structure: acceptable reliability and factor structure
4. Relations to other variables: correlation with scores from another instrument assessing the same construct
5. Consequences: do scores really make a difference?

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