

# A DESCRIPTIVE AND COMPARATIVE STUDY ON THE AVAILABILITY OF LABORATORY DIAGNOSTICS FOR POISONED PATIENTS IN MALAYSIA

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## Abstract

**Introduction:** Acute poisoning is a common medical emergency in Malaysia. Management of the poisoned patient is based on patient's medical history, clinical assessment, and laboratory diagnostics including routine biochemistry assays, toxicology screening, and specific analyses.

**Objectives:** The aims of this study were: to analyze the availability of laboratory diagnostics, specifically relating to the management of the poisoned patients in Malaysia; and to evaluate the availability of laboratory diagnostics according to hospital types.

**Method:** A comparative, descriptive cross-sectional study was conducted using structured questionnaire. This study was conducted from April to September 2008. Validated questionnaires were sent to all government hospitals all over Malaysia. The primary target was the Accident and Emergency Department of each hospital. Data were entered and analyzed using the Statistical Package for Social Sciences programme (SPSS) version 16. Data were analyzed descriptively as frequencies and percentages; Chi-square was used to test differences between groups.

**Results:** Seventy-four (58.3%) out of the targeted 127 hospitals responded and furnished the questionnaire. One hospital did not fill up the required information and it was excluded. The findings indicate all hospitals have at least seven out of the nineteen laboratory diagnostic tests in their labs. These included the test for blood glucose, electrolytes, full blood count, blood gases and pH, liver function, renal function, and urine full examination. Despite this, the three items: cholinesterase activity, carboxyhaemoglobin, and methaemoglobin were very scarce (less than 10% of all hospitals). There were significant differences among hospital types in the availability of plasma osmolality ( $P = 0.012$ ), cholinesterase activity ( $P = 0.02$ ), carboxyhaemoglobin ( $P = 0.037$ ), methaemoglobin ( $P = 0.04$ ) and acid-base balance ( $P < 0.001$ ).

**Conclusion and recommendations:** The availability of laboratory diagnostics was shown to be lacking in most hospitals while we acknowledge that no clinical laboratory is able to provide services that cover all needs in analytical toxicology. To achieve this, the establishment of regional centres for specialized toxicology testing is recommended. The availability of the analytical toxicology lab at the National Poison Centre of Malaysia may offer partial solution to the problem but does not have the capacity to test all referred samples. Thus, local guidelines in this matter could provide a better solution to overcome the problem.