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Abstract

This study was aimed to evaluate the accuracy, sensitivity, specificity and time consumed per test of dry chemistry methods compared to wet methods. The study population was 45 patients presented to the central laboratory of Khartoum Teaching Hospital for routine investigation. The biochemical parameters measured were glucose, urea, creatinine and K^+ . They were measured by both wet chemistry methods and dry chemistry methods.

The result showed similar accuracy of dry chemistry methods and wet chemistry method as far as K^+ and creatinine are concerned. The accuracy of dry chemistry methods for urea and glucose were less than the accuracy of the wet chemistry methods.

The sensitivity and specificity of the dry chemistry methods were less than the sensitivity and specificity of wet chemistry methods. However the time consumed per test of dry chemistry is less than that of the wet chemistry. Although the cost per test in the dry chemistry methods is higher than that of the wet chemistry methods. The instrument use in the dry chemistry (Reflotron) is cheaper than that used in the wet chemistry (Hitachi).

We came to conclusion that the dry chemistry can be used as a bed site test or emergency test which can be confirmed further by wet chemistry methods.

□□□□□□□ا

هدفت هذه الدراسة لت قييم د قة، حساسية ، خصوصية والزمن اللازم لإجراء فحص واحد لطرق الكيمياء الجافة .

أجريت هذه الدراسة في 45 مريض قدموا إلى المعمل المركزي بمستشفى الخرطوم التعليمي لاجراء الفحوصات الروتينية , و الفحوصات التي تم قياسها بطريقة الكيمياء الجافة (الريفلوترون) وطريقة الكيمياء الرطبة (الهيتاشي) هي الجلوكوز, البولينا,, البوتاسيوم و الكرياتينين .

وأظهرت هذه الدراسة نتائج ذات د قة متشابهة بين طريقة الكيمياء الجافة وطريقة الكيمياء الرطبة فيما يلى البوتاسيوم و الكرياتينين. أما الد قة بواسطة الكيمياء الجافة كانت أ قل من الد قة بواسطة الكيمياء الرطبة فيما يلى الجلوكوزو البولينا. أما بالنسبة للحساسية و الخصوصية بين الطريقتين كانت حساسية و صوصية طريقة الكيمياء الجافة أ قل من حساسية و خصوصية الكيمياء الرطبة,

الزمن اللازم لإجراء الاختبار بطرق الكيمياء الجافة أ قل من الزمن اللازم لإجراءها بطرق الكيمياء الرطبة , وبالرغم من ان تكلفة الاختبار بواسطة طريقة الكيمياء الجافة أعلى من تكلفته بطرق الكيمياء الرطبة . إلا أن الجهاز المستخدم فى الكيمياء الجافة فهو ا قل تكلفة من الجهاز المستخدم فى الكيمياء الرطبة .

وبالتالي نستنتج أن طريقة الكيمياء الجافة تستخدم بال قرب من المريض فى العناية المكثفة أو في حالة الطوارى والتى نؤكد فيما بعد بطريقة الكيمياء الرطبة.

Abbreviations

ACEP	American Cholesterol Education Programme).
ADA	American diabetes association
ADP	Adenosine diphosphate
ALT	Alanine aminotransferase
ARF	Acute renal failure
AST	Aspartate aminotransferase
ATP	Adenosine triphosphate.
CRF	Chronic renal failure
D.M	Diabetes Mellitus
DKA	Diabetic ketoacidosis
ECF	Extracellular fluid
F.N	False negative
F.P	False positive
GDM	Gestational diabetes mellitus
GIT	Gastrointestinal tract
GLDH	Glutamate dehydrogenase
GOD	Glucose Oxidase
H_2O_2	Hydrogen peroxide
HDL	High-density lipoprotein
HMP-shunt	Hexose's monophosphate shunts
HNS	Hyperosmolal non- ketotic coma
ICF	Intracellular fluid
IDDM	Insulin-dependent D.M
ISE	Ion selective electrode
K.T.H	Khartoum Teaching Hospital

K^+	Potassium
LED	Light emitting diode
NADP	Nicotinamide adenine dinucleotide phosphate
NADPH	Nicotinamide adenine dinucleotide phosphate hyderogenase
NIDDM	Non-insulin-dependent D.M
NPN	Non protein nitrogen
OGTT	Oral glucose tolerance test
POD	Peroxidase
PVC	Polyvinyl chloride
r	Correlation coefficient
RMP	Resting membrane potential
RTA	Renal tubular acidosis
T.N	True negative
T.P	True positive
TCA cycle	Tricarboxylic cycle
UV	Ultra violet

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