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Different size of strip does not affect the diagnostic property of urine pregnancy test

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Background : *Urine Pregnancy is an easily available diagnostic test in the present day. Many urine pregnancy strip tests are available at present.*

Materials and Methods : *Two urine pregnancy strips based on the same immuno-chromatography technique but with different size of strip 3 mm and 5 mm were assessed.*

Samples : *Fifty urine samples sent for urine pregnancy test at Division of Laboratory Medicine, King Chulalongkorn Memorial Hospital*

Results : *The agreement between two tests are 100 %*

Conclusion : *Two different size of strip can provide the same diagnostic property.*

Keywords : *Pregnancy test strip, size.*

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ความเดิม : *การตรวจวิเคราะห์ปัสสาวะนั้นเป็นการตรวจทางห้องปฏิบัติการที่ง่ายและมีที่ใช้อย่างกว้างขวางในปัจจุบัน*

วัสดุและวิธีการ : *แถบจุ่มตรวจปัสสาวะที่มีขนาดแตกต่างกันคือ 5 มม และ 3 มม ได้ถูกทดสอบ*

ตัวอย่าง : *ปัสสาวะที่ส่งมาเพื่อตรวจทดสอบการตั้งครรภ์ ณ ห้องปฏิบัติการเวชศาสตร์ชันสูตร โรงพยาบาลจุฬาลงกรณ์ 50 ตัวอย่าง*

ผลการศึกษา : *พบอัตราการสอดคล้องของผลการตรวจ 100 %*

สรุป : *ขนาดที่แตกต่างกันของแถบจุ่มตรวจปัสสาวะสองขนาดมิได้ส่งผลกระทบต่อผลการตรวจวิเคราะห์*

คำสำคัญ : *แถบจุ่มตรวจปัสสาวะ, ขนาด*

Urine Pregnancy is an easily available diagnostic test in the present day. Due to the simple basic of immunological principle [1-3], many urine pregnancy diagnostic tests were produced. [4] Due to the easily using steps and inexpensive cost per test, it is widely used nowadays. Generally, urine pregnancy is a monitoring of human chorionic gonadotropin (hCG), which is secreted by the trophoblastic cells of the placenta soon after implantation of the fertilized egg into the uterine wall.[5]

At present, urine pregnancy test is routinely performed by urine pregnancy strip test. The test is performed based on immunochromatography technique. At present there are several commercial test kit. An important consideration is the size of the test size. The different sizes of strip might affect the diagnostic property but there is no proof on this fact. In this work, the authors performed a study to answer the question if different sizes of strip affect the diagnostic property of urine pregnancy test.

Materials and Methods

This study is designed as a descriptive study. The study was performed as a comparative laboratory measurement. Two urine pregnancy strips based on the same immunochromatography technique but with different size of strip 3 mm (IND Diagnostic One-Step hCG Test-Strip, IND Diagnostic INC.) and 5 mm (HCG Pregnancy Urine Test Strip/Dipstick 5 mm, W.H.P.M INC.) were assessed. Fifty urine samples from the woman with menstruation lack, sent for urine pregnancy test at Division of Laboratory Medicine, King Chulalongkorn Memorial Hospital was used as tested samples in this work. The couple method cannot be analyzed by the same person, bias result would occurred. The two analysts analyze their samples through different methods and the both persons must not know the results from each other. This work is a pure laboratory study without usage of patient identification. The agreement between both tests were calculated by descriptive statistic (%).

Results

Of 50 tested samples, there were 13 positive and 37 negative samples. The agreement between both tests are 100 %.

Discussion

Urine pregnancy test in medical laboratory practice is a frequently used test one due to its convenient and effectiveness. The common indication for laboratory request was missed menstruation. Urine qualitative/semiquantitative tests are most popular and basic clinical laboratory tests. [6] The main method for analysis is the immunochromatography. Basically, the urine strip has the 3 mm strip size. Recently, the new generation of test strip with 5 mm strip size is developed. In this work, the author evaluate the agreement between the urine pregnancy test results between strips of both sizes.

According to this work, it can be seen that the agreement of both tests are 100 % reflecting the complete similarity of the result between both tests. Therefore, Any size of strip can provide the same diagnostic property. The larger size of strip may make it more easy to use due to easy grasping, however, the larger strip is also more expensive. There is an important point to concern. This study is a comparative study on strips from two manufactures. Although the two strips use the same analytical principle, the amount

of reagent coding on the strips might be different. The manufacturers have to validate with gold standard. It cannot conclude that difference in size of strip have no effect on analytical result be done. Dividing the strip from one into two separated strips are not permitted.

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