

Volume 6, No. 1 (Supplement)

June 2011

ISSN 1823-2140

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*with an*  
INTERNATIONAL REACH

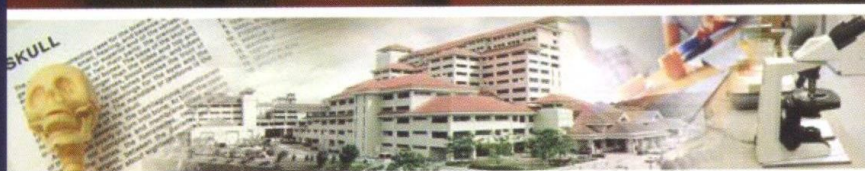


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# MEDICINE & Health

The Official Journal of The Faculty of Medicine UKM

## 7<sup>th</sup> Malaysia Indonesia Brunei Medical Sciences Conference "TOWARDS A HOLISTIC AND INTEGRATIVE APPROACH IN HEALTHCARE"



22<sup>nd</sup> - 24<sup>th</sup> July 2011

Equatorial Hotel, Bangi, Selangor,  
MALAYSIA

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## THE PROPORTIONAL DIFFERENCE OF PROSTATE-SPECIFIC ANTIGEN (PSA) REACTIVITY IN SEMINAL FLUID AND URINE USING RAPID TEST DEVICE

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### Background:

Ejaculate or seminal fluid contains a specific component of prostate-specific antigen (PSA). Currently, in Indonesia, there aren't any PSA screening tools that use semen. The purpose of this study is to determine whether the rapid test devices can be used to detect PSA in seminal fluid specifically.

### Methods:

A cross sectional study has been conducted. Semen was diluted in stages up to  $1/5 \times 10^6$  and male urine up to  $1/200$  using distilled water, whereas female urine was not diluted. Then, two drops of sample were transferred to the test device. Positive tests results are indicated by the appearance of a pink line on the test region (T).

### Results:

A total of 45 samples were analyzed using rapid test device PSA. The proportion of positive results of PSA in seminal fluid, male urine and female urine respectively is 100%, 6.67%, and 0%. Statistically, these differences are highly significant. The analysis revealed that the PSA rapid test device was 100% sensitive and 96.67% specific to detect seminal fluid. The test also have PPV 93.75%, NPV 100%, LR(+) 33.33, LR(-) 0, and AUC 0.983.

### Conclusions:

Based on these results, the PSA rapid test device are very sensitive in detecting semen that has been diluted until  $1/5000$ , making the test ideal for forensic use in sexual assault cases, in which the amount of specimens are usually very low. This PSA rapid test device is also highly specific for seminal fluid. Therefore, this tool is highly recommended to determine that the specimen examined is seminal fluid, and be confident that a positive result is due to the presence of semen, not urine.

### Keywords:

PSA, rapid test device, sexual assault