

Determination of a cut-off point for prostatic specific antigen (PSA) to avoid unjustified biopsy among asymptomatic Egyptians

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Introduction & Objectives: In Egypt, there is no national screening program for prostate cancer. The Urology Department in Alexandria University established a screening program for prostate cancer among men aged more than 55 years in January 2012. The aim of the present study was to determine a PSA cut-off point for performing Transrectal Ultrasonography (TRUS) guided biopsy among asymptomatic men.

Material & Methods: This study included 1207 men aged more than 55 year of age who were attending Urology Department, Alexandria University for non-prostatic symptoms and accepted to be screened. Digital Rectal Examination (DRE) and PSA level measurement were performed for all included subjects. Transrectal ultrasonography (TRUS) guided biopsy was done for those who found to have PSA>4 ng/ml and or suspicious DRE.

Results: A minority of screened subjects (13%) had PSA of more than 4 ng/ml. Transrectal ultrasonography (TRUS) guided biopsy was performed for 157 subjects who had PSA>4 ng/ml and or suspicious DRE findings. One patient with a PSA>4 ng/ml who had suspicious DRE finding proved by TRUS biopsy to have prostate cancer giving PPV=100. Among those who have PSA level of 4.1-10, PPV is 54 among those with suspicious DRE findings as compared to 0 among those with non suspicious DRE. A higher PPV is observed for those who had PSA level of 10.1-20 and >20 with suspicious DRE findings (77 and 100 respectively). The mean serum total PSA was 77 and 0.6 ng/ml for patients with and without prostatic cancer respectively ($p=0.0001$). The yield of cancer prostate among all screened patients was 103/1207=8% and 103/157=65% among those with PSA>4 ng/ml and were biopsied. Considering all the patients who had biopsy based on PSA and or DRE, ROC curve could derive a cut-off value of 10.05 ng/ml with a sensitivity of 92 percent and a specificity of 92.6 percent (area under curve, AUC 0.973±0.012, 95% CI (.950-0.997 $P<0.000$). The likelihood ratio is sensitivity/1-specificity=12.43.

Conclusions: In a country of relatively low prevalence of prostate cancer like Egypt, a cut-off point of PSA in combination with DRE for doing TRUS biopsy could be 10.05 ng per ml among asymptomatic men of more than 55 years of age with a likelihood ratio of 12.43.

Biography

Afaf Gaber Ibrahim Salama Elhanash is currently a Professor of Public Health, Social and Preventive Medicine. Community medicine and Public Health Department, Alexandria Faculty of Medicine. Egypt. She is also a Head of Evidence based clinical practice guidelines center affiliated to Healthcare Quality Directorate of Alexandria university hospitals. (Founded Nov. 2008, Member of Guidelines International Network (G-I-N) Since May 2009), Visiting professor in Arabic Bierut University in Lebanon in 2001, WHO Short term consultant: Participated as an international supervisor in conducting Retrospective Crude Mortality survey conducted in Greater Darfur Region, Sudan in May-June 2005 & Visiting Professor at Arab Academy for Science, Technology and maritime transport as course instructor of Best Practice Guidelines course for Master of health care management. She has published many articles in reputed journals.

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