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PROSTATE-SPECIFIC ANTIGEN DYNAMICS IN DIAGNOSIS OF PROSTATE CANCER

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Prostate-specific antigen (PSA) is now globally applied as the best serum marker for diagnosis and monitoring of prostate cancer (CaP), but with certain limitations in terms of specificity and sensitivity. The upper limit for a normal PSA level of 4 ng/ml was suggested in 1986. In the PCPT study, PSA sensitivity (for a 4 ng/ml limit) was 21% for all types of CaP, or 51% for high grade carcinoma, with only one third of patients with high PSA value having CaP. However, it has been shown that there is a continuum of risk, in which patients with higher PSA values have a higher risk for CaP. In order to increase sensitivity (increase in the number of diagnosed CaP) and specificity (reduce the number of unnecessary biopsies), there was a need for development of other parameters: PSA doubling time, PSA velocity, f/t PSA, PSA density, Prostate Health Index-PHI, 4K score test. Also, in order to optimize patients for CaPscreening, so-called nomograms and risk calculators have been created. It is still questionable whether PSA screening has an impact on patients' survival, and two of the largest, randomized, prospective studies (ERSPC and PLCO) could not resolve this question. While ERSPC showed a 27% reduction in mortality after 13 years of follow-up, PLCO study did not show the benefit of screening on tumor-specific mortality.

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