Prostate-specific antigen: an evolving role in diagnosis, monitoring, and treatment evaluation in prostate cancer.

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Abstract

Prostate specific antigen (PSA) was introduced as a prostate cancer screening tool more than 20 years ago. However, there is continuing debate regarding its utility in screening for prostate cancer. Mass screening is costly, may result in the diagnosis and treatment of prostate cancers that never become clinically significant, and the evidence of a subsequent reduction in mortality is inconclusive. In addition to its role in screening, PSA is also used to monitor the progression of the disease, both localized and metastatic. Although the evidence is contradictory, PSA is still an important tool for monitoring patient progression following treatment of definitive localized prostate cancer. However, its use in monitoring castrate-resistant prostate cancer (CRPC) is more controversial, particularly in the context of novel targeted treatments, which may have little impact on PSA levels. These issues highlight the urgent need to identify prostate cancer biomarkers that will improve early disease detection, increase accuracy of diagnosis, determine the aggressiveness of disease, and monitor treatment efficacy, particularly in late-stage disease. This review discusses the key issues associated with the use of PSA as an early screening tool for prostate cancer, as a prognostic marker to measure disease progression in both early- and late-stage prostate cancer, and as a surrogate endpoint in clinical trials with new agents.

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