Castration-resistant prostate cancer: from new pathophysiology to new treatment targets.


Abstract

CONTEXT: Castration-resistant prostate cancer (CRPC) refers to patients who no longer respond to surgical or medical castration. Standard treatment options are limited.

OBJECTIVE: To review the concepts and rationale behind targeted agents currently in late-stage clinical testing for patients with CRPC.

EVIDENCE ACQUISITION: Novel targeted therapies in clinical trials were identified from registries. The MEDLINE database was searched for all relevant reports published from 1996 to October 2009. Bibliographies of the retrieved articles and major international meeting abstracts were hand-searched to identify additional studies.

EVIDENCE SYNTHESIS: Advances in our understanding of the molecular mechanisms underlying prostate cancer (PCa) progression has translated into a variety of treatment approaches. Agents targeting androgen receptor (AR) activation and local steroidogenesis, angiogenesis, immunotherapy, apoptosis, chaperone proteins, the insulin-like growth factor (IGF) pathway, RANK-ligand, endothelin receptors, and the Src family kinases are entering or have recently completed accrual to phase 3 trials for patients with CRPC.

CONCLUSIONS: A number of new agents targeting mechanisms of PCa progression with early promising results are in clinical trials and have the potential to provide novel treatment options for CRPC in the near future.

Comment in

Recent progress and pitfalls in testing novel agents in castration-resistant prostate cancer. [Eur Urol. 2009]

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