Is prostate cancer changing?: evolving patterns of metastatic castration-resistant prostate cancer.

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Abstract

BACKGROUND: Metastatic castration-resistant prostate cancer (mCRPC) most commonly metastasizes to the bone, and less commonly to nonosseous sites (eg, lymph nodes, liver, lung). With new therapies extending survival in mCRPC, it was hypothesized that the pattern of metastases is changing over time. The pattern of metastatic disease was evaluated in men with mCRPC, as reported in baseline characteristics of prospective clinical trials over 2 decades.

METHODS: This study identified all phase 2 and 3 therapeutic studies in men with mCRPC in PubMed and American Society of Clinical Oncology abstracts from 1990 to 2012. Studies were excluded if they did not report demographic data and sites of metastasis, or excluded patients with a specific site of metastatic disease (except brain). For each type of metastasis, weighted least squares linear regression models were used to evaluate temporal trends.

RESULTS: A total of 290 eligible studies (270 phase 2 studies and 20 phase 3 studies) involving 19,110 patients were identified. Between 1990 and 2012, the rate of nonosseous metastasis increased significantly at 1.6% per year (P < .0001), whereas the rate of osseous metastasis decreased at 0.5% per year (P < .0001). The rate of lymph node metastasis increased at 1.4% per year (P < .0001), but the rate of liver and lung metastasis remained relatively stable.

CONCLUSIONS: A notable change was found in the pattern of metastasis in patients with mCRPC. Because these evolving patterns may have important implications in treatment selection and prognosis, it is crucial that future clinical trials of patients with mCRPC define patients with a uniform reporting of nonosseous metastasis.

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KEYWORDS: bone; castration-resistant prostate cancer; liver; lung; lymph node; metastasis; patterns; visceral

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