Prostate targeted local therapy may be effective and safe for patients with newly diagnosed oligometastatic prostate cancer – A systematic review and meta-analysis

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Context: The role of local therapy (LT) for the management of oligometastatic prostate cancer (PCa) at diagnosis still remains poorly defined.

Objective: We aimed to perform a systematic review and meta-analysis evaluating LT of the primary tumour for oligometastatic prostate cancer patients at diagnosis as well as the patients who can benefit the most.

Method: A systematic review of PubMed, Embase, Medline and the Cochrane Library was performed in March 2016. Seven retrospective studies were selected for inclusion. The risk of bias for the individual research studies was appraised using the Newcastle-Ottawa Scale (NOS). The publication bias was evaluated using both the Egger’s linear regression approach and funnel plots. All statistical analyses were performed using Stata v.12.0 software (StataCorp, College Station, TX, USA).

Findings: A total of 24,203 patients were recruited from 1989 to 2010. For the overall survival, the pooled hazard ratio (HR) was 0.53 (95% confidence interval [CI], 0.40–0.71; p < 0.005) in patients treated with LT compared to no local therapy (NLT). LT was also associated with a 49% amelioration of disease-specific survival (DSS) (95% CI, 0.37–0.69; p < 0.005). Significantly increase in DSS was better pronounced in patients under 65 years old (HR: 0.39; p < 0.001). Tumor-specific factor associated with the significantly better survival was observed in AJCC (American Joint Committee on Cancer) M1a stage patients (HR 0.29; p < 0.001).

Interpretation: Local therapy for a primary tumour with local therapy conferred a significantly better outcome in fit patients with oligometastatic PCa at diagnosis. The evidence also suggests that RP is a preferable LT procedure for patients aged ≤ 65 years or for those who are AJCC stage M1a. We believe that important LT factors should be systematically assessed to develop a personalised approach to improve patient survival.

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